# REPORT RESUMES

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ENVIRONMENTAL STIMULATION AND INTELLECTUAL DEVELOPMENT OF
MEXICAN-AMERICAN CHILDREN--AN EXPLORATORY PROJECT.
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THE RELATIONSHIP BETWEEN SPECIFIC ENVIRONMENTAL (SUBCULTURAL) FACTORS AND THE DEVELOPMENT OF INTELLECTUAL ABILITIES OF MEXICAN-AMERICANS WAS STUDIED. THE SAMPLE CONSISTED OF 80 FIRST-GRADERS AND THEIR FAMILIES. ASSIGNMENTS WERE MADE FOR COMPARISON OF THE SUBJECTS INTO EITHER A HIGH POTENTIAL GROUP OR A LOW POTENTIAL GROUP. ASSIGNMENTS WERE DETERMINED BY COMPOSITE SCORES OBTAINED ON THE VAN ALSTYNE PICTURE VOCABULARY TEST AND THE GOODENOUGH-HARRIS DRAWING TEST. INTERVIEWS WERE THEN CONDUCTED WITH THE MOTHERS OF THE SUBJECTS AND TRANSCRIBED. RATING SCALES WERE USED TO MEASURE 33 CHARACTERISTICS, RELATING TO A SET OF NINE ENVIRONMENTAL PROCESS VARIABLES. AN INDEX OF STATUS CHARACTERISTICS WAS COMPUTED FOR EACH FAMILY, AND ENVIRONMENTAL RATINGS OF FAMILY LIFE WERE OBTAINED. THE CHILDREN IN THE HIGH POTENTIAL GROUP WERE FOUND TO COME FROM BACKGROUNDS THAT OFFERED A GREATER VARIETY OF STIMULATING EXPERIENCES THAN WERE AVAILABLE TO MOST CHILDREN IN THE LOW POTENTIAL GROUP. IN ADDITION, HIGH POTENTIAL CHILDREN SCORED SIGNIFICANTLY HIGHER ON VOCABULARY TESTS IN BOTH ENGLISH AND SPANISH. FURTHER RESEARCH WAS SUGGESTED TO BE BASED ON OBSERVATION RATHER THAN INTERVIEW REPORTS AND TO FOCUS IN GREATER DEPTH ON A NARROWER RANGE OF VARIABLES IN A STUDY OF INTELLECTUAL DEVELOPMENT. (RS)

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Cooperative Research Project No. 6-8068-2-12-1

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U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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SIGNED: Ronald W. Henderson

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# ABSTRACT

A large proportion of Mexican-American children in the American Southwest experience difficulty in school and fail to acquire skills necessary for a productive role in the community. A review of the literature suggested that what is commonly referred to as intelligence may be largely learned through interaction with the environment. The experiences available to a sub-cultural group may not facilitate the development of the kinds of intellectual abilities needed in a modern technological society.

The principal problem of this study was to compare the environmental backgrounds of Mexican-American six-year-olds to determine whether differences exist between the environments of children showing promise of successful school performance and the environments of children for whom poor performance is predicted

Ss were 38 Mexican-American six-year-olds for whom school success was predicted, and 42 children for whom poor school performance was predicted. All subjects spoke some Spanish and had Spanish surnames.

The Goodenough-Harris Drawing Test and the Van Alstyne Picture Vocabulary Test were administered to a population of 378

Mexican-American six-year-olds. Children who scored highest and those who scored lowest on these measures were selected for study and designated as High Potential ( HP ) and Low Potential ( LP ). These 80 children were also tested with a Spanish Translation of the Van Alstyne Picture Vocabulary Test.

Data on environments were gathered by interviewing the mothers of children in the samples. Typescripts were prepared from the tape recordings of the interviews. Thirty-three rating scales were used to evaluate the protocols of the interviews on nine Environmental Process Variables. A multivariate analysis was used to test the significance of differences in environmental ratings of the two groups. An Index of Status Characteristics was computed for each family and a descriptive analysis was constructed from the protocols to provide additional comparison of the two samples.

The hypothesis that there is no significant difference in the environments of HP and LP children was tested with Hotelling's $T^2$. The F ratio of 6.7643 was significant beyond the .01 level $\left[F_{.01}\ (\text{df } 9,\ 70) = 2.67\right]$. The null hypothesis was rejected.

Scores on the ISC correlated .37 with the composite criterion scores used to predict school success. Composite ratings for the nine environmental variables correlated .59 with the criterion scores. The difference between these two correlation coefficients was not significant.

HP children scored significantly higher than LP children on vocabulary tests in both languages. The descriptive analysis showed HP families travel more and present more experiences to their children. Both groups were interested in the education of their children, but the LP families were concerned with meeting daily needs.

# CHAPTER I

# INTRODUCTION

The plight of disadvantaged Americans has become a topic of increased national concern over the past decade, and perhaps especially since the magnitude of the problems associated with this issue was illustrated in popular form by Harrington in his widely circulated book, The Other American. As the public and its elected leaders have become more fully aware of the far reaching implications of the exclusion of a large segment of the population from a productive role in American life, we have increasingly looked to the schools for action that might prove effective in reducing the effects of experiential backgrounds which differ markedly from that of the middle class.

## General Background

In the American Southwest, the Mexican-American population represents one large group for whom school experiences seem not to have been effective in providing the skills or motives requisite to improved economic opportunities for a sizable proportion of these people. This is certainly not to say that all Mexican-Americans may be considered disadvantaged, or that they represent a well defined or homogeneous sub-cultural group. However, we may see the extent to which a significant number of adults in this group differ from middle class Anglo residents of the same community by examining a recent market survey, prepared under professional direction, by the Distributive Education Club (1964) of a large high school which serves a region inhabited by a high percentage of Mexican-American families.

In this study, it was found that 20.1 per cent of the family heads were unemployed, compared to eight per cent for Pima County and five per cent for the nation, as of the time of the survey. In addition, 14 per cent of the heads of households were employed only part-time. Of the unemployed, 68.8 per cent had been unemployed for up to two years, and 31.1 per cent had not worked for a period ranging from two to four years. It was also found that those who were working earned significantly less than the median for the county. Another very pertinent fact revealed by the survey was that, of the heads of households who were unemployed, only a small percentage indicated that they were actually looking for work. In one predominantly Mexican-American area, 50 per cent of those who were unemployed indicated that they were not looking for work, and in another area of similar ethnic composition 46 per cent of the unemployed were not looking for work.

While no single factor could suffice to explain the situation illustrated by these facts, educational deficiencies certainly appear to be significant. Only 34 per cent of those surveyed had attained a 12th grade education, and there is some reason to question the effectiveness of their education. Of 1600 heads of households who were unemployed and looking for work, only 728 knew what kind of work they were looking for.

Turning from the adult community to the children in school, the cumulative records of students in junior high school indicate that the performance gap between low-achieving Mexican-American children and the local norms for standardized achievement and school ability tests grows larger as the children progress through school. This is an example of the "cumulative deficit" which Deutsch ( 1965 ) and his associates have documented for culturally disadvantaged youngsters in other areas of the country.

Examining these and related observations in the light of a concept of intelligence synthesized by Hunt ( 1961 ) leads the investigator to believe that the cumulative deficit in intellectual functioning of such large numbers of Mexican-American children in this community may be understood in terms of the kinds of early experiences available to them. It was suspected that certain limitations in the kinds of environmental encounters experienced by culturally deprived

Mexican-American children place further limitations on the kinds of subsequent experiences that can be meaningful to them. In Piaget's terms, we would speculate that their existing schemata are insufficiently developed, because ". . . the organism can assimilate only those things which past assimilations have prepared it to assimilate" ( Flavell, 1963, 50 ). Therefore, it would be suspected that many experiences may have no meaningful elements and cannot be readily assimilated by these children.

A number of action programs are now in progress under Federal sponsorship, in an effort to bring about some change in the circumstances which we have outlined. It is probably too early to expect a balanced evaluation of these programs. It does seem clear that before this problem can be adequately approached through well-planned compensatory programs, a good deal more must be known about the populations in which change is to be affected.

Viewed from the perspective of this complex of problems, the school may be seen as an instrument of directed cultural change, designed to improve the ability of those who attend it to participate more effectively in American social and economic life. The paucity of positive results which may be attributed to school experiences suggests the need for a broader understanding of influences on intellectual development and upon behavioral stability and change.

A thorough understanding of the range of similarity and diversity in experiences which youngsters from a particular ethnic or social background have had before coming to school is vital in planning to bring about change.

If the efforts of educators are to meet with greater success than has been the case in the past, investigations of this problem should be of major significance to education. One characteristic of much of the research and discussion on cultural deprivation and related problems is that sub-cultural differences in school achievement have been documented, differences in drop-out rates discussed, differences in values or attitudes suggested, and so on. There has been little work aimed at the specific objective of determining the kinds of experiences lacking in the backgrounds of educationally disadvantaged youngsters, with a view to determining just what kinds of curricula and methodological changes should be made to compensate for these deficiencies.

In Chapter II, the literature relevant to social and cultural correlates of intellectual development has been reviewed, but it is appropriate here to indicate a general weakness of much of the literature on the culturally deprived. The majority of studies in this area have lacked the integrative view of behavior and performance that the anthropologists' concept of culture could lend to investigations in this field. While the role of attitudes, family, peers, social class, and so on, are acknowledged, most treatments fail to assess the specific patterns of behavior prevailing in any of the cultural subsystems to which they give their attention. Attempts to take the cultural background of youngsters into account have frequently depended upon questionnaires presumed to assess attitudes or values directly. Investigators using such instruments apparently assume that a comparison of responses from students from different cultural environments will help to explain motivational differences underlying differential school performance. There has been little recognition of the differences between "ideal" responses to questionnaires (those responses the subject feels the interviewer would approve of), and "real" responses, which consist of the actual patterns of behavior in which the subjects engage.

Even if we accept at face value recent studies of stated attitudes of disadvantaged youngsters and their parents, many of whom now seem to value the same things as the dominant segment of society (Weiner and Murray 1963, Sherif and Sherif 1964), the discrepancy between attitudes and behavior remains largely unexplained.

While the effects of culture on behavior cannot be overlooked, the term "culturally deprived" is a misnomer. No group is deprived of culture, since, by definition, culture consists of learned and shared patterns of behavior, and every "normal" human being behaves in many ways like other humans of his particular group. They all participate in kinds of behavior which display certain predictable regularities. It is quite clear that while subcultures may provide experiences that have a positive adaptive value within that cultural system, they may not furnish experiences that are appropriate to the requirements of the dominant culture. Anthropologists generally emphasize a relative view of culture, which holds that each culture has ". . . its own system of values, and indeed its own areas of complexity in custom" (Keesing 1958, 47). However, it is likely that not every cultural environment provides a comparable range of variation in the kinds of experiences made available to the children being socialized in that system. In these terms the following statement by Bloom is relevant:

> . . . the strategy of research on environmental variation should begin with the attempt to describe and measure the specific characteristics of environments and then proceed to the study of the consequences of various combinations of these specific characteristics (Bloom 1964, 186).

To the present investigator this suggests a study of the range of objects and of the patterned interrelationships of various sociocultural elements of the environment, calling for the application of anthropological and sociological concepts to educational problems.

## Purpose of the Study

Existing surveys of various aspects of life among the Mexican-American population in Tucson, such as the research of Getty ( 1950 ), Officer ( 1964 ) and the on-going research of Dr. Arnold Meadow and his associates in the Psychology Department of the University of Arizona, are not widely known among public school personnel in Arizona and educational implications have not been worked out. As educators, we frequently find ourselves attempting to make behavioral interpretations from descriptions of cultural patterns in Mexico proper. Data justifying such interpretations are generally lacking. Specific information concerning the characteristics of the environments of our Mexican-American students is practically nonexistent.

The present study was formulated in the belief that a delineation of specific patterns of interaction with the environment should add to our understanding of those pupils who show little chance of success at school-related tasks. Since some of these students do succeed in school it seemed advisable to study specifically the environmental backgrounds of high potential youngsters, and to contrast these data with comparable information for low-potential students entering school for the first time in the Fall of 1965. The contrasting data thus derived might then be used to provide provisional answers to a number of important educational queries. What kinds of opportunities for interaction with the environment are related to success in school or to intellectual development? Are such factors related to particular socio-cultural phenomena, as, for example, social class or variability in the range of sodalities in which family members participate? To what extent does performance at school reflect differential family expectations concerning the relevance of formal schooling to the practical affairs of living? This study attempts to explore these and related factors.

## Theoretical Basis of the Study

The theoretical basis for this study is a point of view that sees intelligence in phenotypic rather than genotypic terms (Hunt 1961, 42). By rejecting a static view of fixed intelligence we see it possible that environmental factors may have a significant effect on intellectual development, just as it has been demonstrated that various physical characteristics, such as stature, are the result of external environment as well as genetic composition (Stern 1960, 305). A number of scholars have contributed to this point of view, and their work has been most admirably synthesized by Hunt (1961, 259), who summarizes a central hypothesis arising from the work of Piaget, in these words:

> . . . the more new things an infant has seen and the more new things he has heard, the more new things he is interested in seeing and hearing: and the more variation he has coped with, the greater is his capacity for coping (Underlining added).

Perhaps we should qualify this statement with the reservation that there may well be a point of diminishing return, a point at which increased variation leads to a lack of sensitivity to differential stimuli. But if we accept Piaget's general thesis we would expect that, as a wider variety of circumstances must be accommodated, the child is enabled to become interested in a greater and greater variety of circumstances. Curiosity and the ability to profit from experiences with the environment must build upon previously developed schemata. One sort of experience must apparently be assimilated before the child can profit from certain other kinds of experiences. When basic experiences have been missing from the child's environment, gaps exist in his intellectual functioning, impairing further intellectual development.

With specific reference to the population under consideration in the present study, it was suspected that having limited opportunities to imitate a variety of behaviors of adult models, and limited opportunities to verbalize in connection with many of their experiences, may have a restricting effect upon intellectual development.

One might argue that the Mexican-American child, especially after he begins school, may come in contact with a greater variety of stimuli than the Anglo child, for he is operating in some degree within two different subcultures. However, variation in stimulation must also be seen in terms of the language activity that accompanies experiences. John's research ( 1963, 821 ) led her to state that ". . . acquisition of more abstract and integrative language seems to be hampered by the living conditions in the homes of lower-class children." There was some basis for believing that this would also be true of lower-class Mexican-American children in Tucson. The lack of integrative language may make it impossible for them to profit fully from experiences in either culture.

## The Problem

The principle problem of this study concerns the nature of the experiential backgrounds of two groups of Mexican-American youngsters. On the basis of certain criterion measures we have predicted successful school experiences for one of these groups, and relatively less successful experiences for the other group. We wish to know if differences in the kinds of experiences these children have had may be related to their ability to profit from school experiences. Expressing this question in the form of a null hypothesis, we would state that there is no difference in environmental process variables for the two groups. If the null hypothesis is rejected we might interpret this to mean that the low level of intellectual development ( as measured by standardized tests ) and the apathy ( in school related contexts ) witnessed in many students from Mexican-American backgrounds is due, in part, to a lack of variety in environmental stimulation during the pre-school years.

A subsidiary hypothesis is that children whose experiences at home are accompanied by little discourse and few explanations from parents will be among those who display low potential for success in school.

A third hypothesis is that Mexican-American children whose intellectual ability is judged to be inferior to others of their group will be those whose patterns of interaction bring them and their families into a very limited variety of interaction situations which have linkages with the dominant society.

We also hypothesized that the relationship between the criterion measures and the specific environmental characteristics which are discussed in Chapter III will be higher than the relationship between the criterion measures and social status, as measured by Warner's ( 1949 ) Index of Status Characteristics.

## Definition of Terms

A common understanding of a number of specific terms used in this study is essential. These terms are defined as follows:

Intelligence: This study conceives of intelligence as a level of intellectual functioning resulting from the interaction of experience and genetically based factors that influence expressivity. Intelligence, viewed in this way, is modifiable. In more technical terms, intelligence ". . . would appear to be a matter of the number of strategies for processing information that have been differentiated and have achieved the mobility which permits them to be available in a variety of situations" (Hunt 1961, 354). In the present work, the expression of intelligence is measured by the Goodenough-Harris Drawing Test. The genotype for intelligence is not measurable with existing instruments.

High-Potential Children: For the purpose of this study, high-potential children are considered to be those whose average score on a measure of intellectual maturity (Goodenough-Harris Drawing Test) and a sample of encoding knowledge of a sample of English vocabulary (Van Alstyne Picture Vocabulary Test) falls within the top ten per cent, approximately, of the population of six-year-old Mexican-American children who entered a first grade program designed for children from local poverty areas, in September, 1965.

Low-Potential Children: In this study, low-potential children are considered to be those whose average score on the two measures listed above fall within the lower ten per cent of the population of six-year-old Mexican-American children who entered the aforementioned first grade program in September, 1965.

Mexican-American Children: For the purpose of this study, Mexican-American children are considered to be those youngsters who speak Spanish, and who have Spanish surnames.

Anglo: This is a shortened form of the designation "Anglo-American," and is commonly used in this area of the Southwestern United States to designate caucasians who are not of Mexican or Spanish extraction.

Ethnic Group: Keesing (1958, 528) defines ethnic group as ". . . a group with more or less distinctive culture." More specifically, McDonagh and Richards (1953, 14) state that "Ethnic groups tend to have cultural attributes in common to a greater degree than biological characteristics."

Culture: The most appropriate definition of culture, for the purpose of this study, is contained in a summary of the characteristics of culture by Kluckhohn and Kroeber (1952, 257). They state that culture

> . . . consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional (i. e., historically derived and selected) ideas and especially their attached values; culture systems may, on one hand, be considered as products of action, on the other as conditioning elements of further action.

The term culture may be used in a general sense, or to designate the learned and shared behavior patterns of a particular group. The latter usage prevails in this study.

Environmental Process Variables: This term is defined in terms of specific process characteristics and criteria which are a part of the instruments used in the study. Definitions are provided in connection with the detailed description of the instrument set forth in Chapter III.

Sodality: The term sodality is used here with less technical precision than applied by Officer (1964) in his dissertation. For our purposes the term designates any formal organization in which membership is voluntary, and which has some formal structure. The PTA, a fraternal or labor organization, or a church would be considered sodalities. It is recognized that associations defined in this way will vary in the degree to which restrictions are placed upon membership, and in the extent to which membership may be considered voluntary. For example, for Mexican-Americans, membership in the PTA would certainly be more truly voluntary than being Catholic.

Systemic Linkage: Using the concept as it is conceived by Loomis (1960, 32-33).

> Systemic linkage may be defined as the process whereby one or more of the elements of at least two social systems is articulated in such a manner that the two systems in some ways and on some occasions may be viewed as a single unit. . . the process of systemic linkage refers to the organizational arrangements for group interdependence.

## Limitations of the Study

It is widely recognized that the standard instruments available for the assessment of intelligence are culturally biased (Gladwin and Sarason 1957). This fact naturally imposes a limitation upon the interpretation of the results of the standardized instruments used in the selection process in this study. A necessary assumption was therefore that, when used to assess relative performance within a single ethnic group, without reference to national norms, the information derived does provide a justifiable basis for making the kinds of selections necessary in choosing the sample for this study. While such tests do contain varying degrees of cultural bias, an effort was made to select instruments which appeared to be relatively free of bias. Instruments of the type used do tend to be generally predictive of success in school.

This study, like others concerned with the implications of socio-cultural data for educational practices, is limited in its scope. It does not presume to yield information that would take the total cultural background of this population into account. On the other hand, the array of characteristics to which this study attends is sufficiently broad that no single factor is explored in great depth as a more limited study would have done. It is hoped, however, that this approach might provide suggestions that will spark both more specific and more inclusive investigations of related questions.

## Organization of the Study

In Chapter II, the theoretical and empirical rationale which we have suggested in this chapter is developed in some detail. The research design is described in Chapter III which also contains a description of the instruments used.

Chapter IV is devoted to the statistical analysis of the data and the presentation of the quantifiable findings of the study. Data providing some insights into the nature of the cultural similarities and differences of the two samples have been obtained through a content analysis of the interview protocals. Descriptive statements of the results of such content analysis are presented in Chapter V.

Chapter VI summarizes both the statistical and the descriptive findings, and draws conclusions based on those findings. The final portion of that chapter suggests the educational implications of the study and recommends appropriate action.

# CHAPTER II

# THEORETICAL AND EMPIRICAL RATIONALE FOR THE STUDY

In this chapter the theoretical and empirical rationale for the study will be presented. In rather broad terms we will describe the discrepancy between the socio-economic status of Mexican-Americans and Anglos in Tucson. Then, assuming that a high proportion of the Mexican-American ethnic group in this community has not been fully acculturated to the life-way of middle class Americans, we will argue the point of view that conditions which anthropologists propose as facilitators of culture change may constitute necessary, but not sufficient conditions to bring about the complete acculturation of the ethnic population which is a concern of this study. We will then attempt to demonstrate that emerging psychological theories concerning influences on intellectual functioning may provide a natural extension to theories of culture change, as exemplified in the work of Erasmus ( 1961 ).

## The Mexican-American Ethnic Group

1. Historical Background. The Anglos were late-comers to the section of Arizona in which Tucson is situated. Not only were they preceded by the native American Indians, but this region was a part of Mexico until the negotiation of the Gadsden purchase in 1854.

Officer ( 1964, 43-91 ) has compiled an interesting historical description of the social relations between Anglos and Mexicans in this area. The general nature of these relationships may be mentioned here to provide some time depth against which to compare the present situation.

The earliest permanent residents of the area, aside from the Indians, were Spanish soldiers who were quartered in Tucson as early as 1756. The date usually cited for the official establishment of the city is 1776, which was the year in which the Spanish presidio was moved from Tubac to Tucson. Even for two years following the Gadsen Purchase, the Mexican flag continued to fly over the city.

A few Americans were already living in the area at the time of the Purchase, but the first significant influx of Americans began in 1856, and continued until the beginning of the Civil War. Prior to the coming of the railroads a few profitable business partnerships were formed between Americans and Mexicans, and successful merchants from Mexico were attracted to the city.

Unlike many regions of New Mexico, the Tucson area had never supported a large Mexican population. The heaviest period of Mexican immigration was during the decade 1870 - 1880. In general, relationships between Mexicans and Anglos in this area have been good and there has always been a rather high rate of intermarriage. Exceptions to the generally good feelings have been especially evident during times of economic hardship.

By 1910 the Anglo population had become numerically and economically dominant. Even during the period following the 1910 revolution in Mexico, relatively few of the Mexicans who were leaving Mexico came to Tucson, seeming to prefer the agricultural areas around Phoenix and mining centers. In fact, Officer (1964, 48-59) speculates that Tucson was spared some of the strife that characterized American-Mexican relations in other communities in Arizona during this period.

The period from 1910 through 1930 is characterized by Officer (1964, 61) as one of "stabilized pluralism." He means by this that the socially and economically dominant Americans were highly tolerant of the cultural differences of the Mexicans. In many ways this term may characterize the situation even today.

Following the Second World War the community underwent tremendous changes. Not only did the Anglo population increase by leaps and bounds, but many Mexican-American families migrated from the traditional barrios to other residential areas, and Mexican-Americans began to participate more in the political affairs of the community and to attend the University in increasing numbers.

2. General Social Status of the Ethnic Population. During the period 1950-1960 the over-all population of the metropolitan area of Tucson increased by 88 per cent. To this we may compare a population increase of 63 per cent for the "white population of Spanish surname." Both figures are largely attributed to immigration. Within the municipal boundaries of Tucson and South Tucson, the area which is the concern of both the present study and Officer's work, 18.2 per cent of the total population was composed of residents who had Spanish surnames.

The educational and economic status of the Mexican-American ethnic group may be dramatized by comparing them with the total population of the city. In four of the five traditional Mexican barrios listed by Officer ( 1964, 85 ) the median income ranges from about $850 to $1250 less than the median for all Spanish surname families. The median for all families with Spanish surnames was $4,735, while the median for the community as a whole was $5,703. This not only indicates the relatively low incomes of a large proportion of the Mexican-Americans of the community, but clearly illustrates that a few of the traditional Mexican barrios constitute pockets of severe poverty.

When we look at Officer's ( 1964, 85 ) figures on educational status, we find that the median number of school years completed by the Mexican-Americans was 8.1 years, while for the total population of the city it was 12.1 years.

Officer (1964, 91) also compared occupational statuses of Mexican-Americans and Anglos, and concluded that:

> . . . the so-called "blue-collar" and lower echelon "white-collar" jobs were the mainstays of the Mexican colony, with relatively few persons in the managerial and professional categories associated with upper middle and upper class status.

3. Summary: Acculturation Status. To summarize, it would appear that while many of the early Spanish and Mexican residents of the community were in economically strong positions, the Mexican population became economically and socially subordinate to the incoming Anglos by the early part of this century. After half a century, a high degree of cultural pluralism still exists in the community, and by no measure available can the Mexican-Americans be said to enter freely into the social and economic opportunities of the community. While continued immigration from Mexico makes a precise assessment difficult, it appears that the general acculturation of this ethnic group has not been rapid.

## The Mexican-American Ethnic Group as a Target of Directed Change

We will not make value judgments concerning the desirability of more rapid acculturation on the one hand, or of preserving valued Mexican traditions on the other. As a matter of simple observation it seems that school personnel have demonstrated through their actions that they seek to bring about changes that would enable the Mexican-

American child to become a part of the wider community. Beyond this rather vague goal most school personnel seem never to have clearly defined their objectives, which for some may be to bring about complete assimilation of Mexican-Americans, and for others may be to help their subjects become completely bicultural. Whichever end they seek, the public schools, controlled by middle class boards and staffed by middle class teachers and administrators, are attempting to bring about changes in certain characteristic behavior patterns of these people.

### Limitations of the Efforts to Introduce Change

Whatever the desired end, a major problem hindering a more effective approach to the problem is that there has been little systematic work done in identifying the specific behaviors which are the targets of directed change, or in identifying associated cultural and psychological traits that may act as inhibitors of change. We know little about the ways in which the Mexican-American population of Tucson is similar to or different from such populations in other areas of the Southwest. Some of the more widely circulated works on Mexicans in the United States appear to be rather highly generalized (e.g., Burma 1954, McWilliams 1940), while others, such as the work by Kluckhohn and Strodtbeck (1961) deal with communities which have been less subjected to the kinds of pressure for change that are characteristic of more urbanized environments. We would accept Dozier's (1964, 2) statement that scholars are in general agreement concerning selected characteristics of Spanish-speaking groups in the Southwest, but we need to know more specifically what values have changed, the degree of dependency on authority or upon extended kinship systems, and the specific conditions of the human and material environment in which the child is reared, if we are to come nearer than we have to being able to describe the factors that may facilitate or inhibit success in school, and subsequent movement into the social and economic activities of adulthood. The present study is concerned with discovering and describing, for the Mexican-American ethnic group in Tucson, characteristics of the home environment which may be related to the individual child's future success in being able to function effectively in the varied social institutions of the dominant society.

## Factors Influencing Change

Through their acquaintance with a variety of cultures, and generally through a comparative method of analysis, anthropologists have been in a strong position to speak authoritatively concerning cultural factors that would be likely to facilitate or to impede culture change. Examples of the properties of cultural systems that anthropologists have suggested may have such effects include boundary-maintaining mechanisms, structural rigidity or flexibility of a cultural system, and self-correcting mechanisms (Social Science Research Council, 1954). Keesing discusses such factors as relative population size of the contact groups, momentum, effectiveness of contact, relative prestige status, and other concepts that have been proposed as factors that influence stability or change in cultural dynamics (Keesing 1958, 384-392).

These undoubtedly may be significant factors in some conditions of culture contact, and their study may best be left to anthropologists who are qualified to conduct such investigations. Certainly such studies would add to our knowledge of the dynamics of the relationships between the Mexican-American and Anglo communities in Tucson.

While acknowledging the need for the investigation of such factors, we see the slightly different tack taken by Erasmus (1961) in his study of directed culture change as particularly pertinent to our interests in the present investigation.

Erasmus directs his inquiry toward "dual societies," in which contrasts in living standards lead to new "wants," which develop more rapidly than they can be satisfied through effort. Erasmus feels that when the increase in expectations does not keep pace with this increase in felt needs, messianic or utopian movements may result from this frustration. He documents these assumptions by surveying programs of directed change in Latin America. We might speculate that the lack of utopian movements in the American Southwest may be explained on the basis of the functions of social agencies, which intercede to alleviate extreme frustration of the type that has been witnessed in Latin American countries.

Erasmus ( 1961, 10 ) makes the assumption that man can direct behavioral change through deliberate effort, and he goes on to develop what he calls ". . . a scheme of cultural causality, congenial to an applied interest in culture change." In this scheme he proposes two causal components which he sees as psychological attributes of cultural agents: motivation and cognition.

While motivation functions as the stimulus for action, the action is made possible by symbolic and creative processes of cognition. His model involves only three basic motivations. These are ( 1 ) desire for survival, ( 2 ) sexual gratification, and ( 3 ) prestige, social status or achievement ( Erasmus 1961, 56 ). It would seem that a theory of motivation such as that formulated by Maslow ( 1954 ) would be better suited for explaining the effectiveness of different motives in the direction of behavior under differing cultural and economic conditions. However, the aspect of Erasmus' scheme that is of specific interest to us is his concern with cognition, a concept that has only very recently gained wide currency in the anthropological literature.

The way in which Erasmus conceptualizes cognitive activity as a psychological factor in culture change becomes clear through his use of illustrative material documenting attempts at directed change in Latin America. Through such examples, Erasmus demonstrates his principle of frequency interpretation. People may feel a need for an innovation, but cognition related to such changes operates in the form of probability estimates which are based on inductive inferences from experience. In other words, the advantages of adopting new alternatives is easily perceived. From his survey of attempts to bring about change he concludes that "Given adequate opportunity to measure the advantage of a new alternative, they (uneducated people) act to maximize their expectations" (Erasmus 1961, 56).

While this model may be appropriate in discussing efforts at bringing about change which involves the acceptance of new medical practices, or improved agricultural methods, it seems to be too limited to elucidate the problems involved in bringing about the kinds of changes necessary if Mexican-Americans were to become fully functioning members of the total society. The relatively low economic, social, and educational status of this group has been documented throughout the Southwest, and is not a feature of Tucson alone (cf. Caplan and Ruble 1964, Broom and Shevsky 1952). Although there are undoubtedly life-ways which most Mexican-Americans would be reluctant to abandon, it seems doubtful that failure to participate in some of the material advantages of Anglo culture is purely a matter of choice. For these people, the pursuit of felt needs does not guarantee that these needs will be attained. If change is to occur, motivation is, of course, necessary. In operation, it is inseparable from various aspects of cognition.

While Erasmus' scheme has certain limitations, the emerging literature on cognition and intellectual development has led this writer to believe that Erasmus' attention to individual cognition is a step in the right direction. As with other schemes, we would suggest that it is merely too limited to account for the inability, or disinclination, of certain ethnic minorities or depressed social classes to be successful in school and in the subsequent social and economic activities of adulthood.

### Broadening the View of Cognition as a Factor in Acculturation

If the principle of frequency interpretation is of limited utility in accounting for the slow rate of change of an ethnic minority living in continuous firsthand contact with a highly complex technological society, how would we apply a broader conceptualization to the role of cognitive activity in such situations? We suggest that psychological literature which considers the relationships between environmental experiences of a human organism, and the pattern of intellectual development of that organism, provides some suggestions for such an extension. We suggest that changing from a way of life in which education and abstract verbal functioning are of limited importance, to a set of relationships in which these are extremely important attributes, involves a much greater demand upon cognitive processes than merely recognizing the relationship between a change in behavior and a desired outcome.

To explore this proposition further we shall turn to a consideration of some of the literature on the nature of intelligence and intellectual functioning. In order to consider the proposition with some awareness of the difference between the view taken here and more traditional thinking, we must begin by examining some of the tenets which psychologists have held concerning the nature of intelligence.

## Environmental Influences on Intellectual Development

The historical controversy over the relative effects of heredity and environment on intelligence is well known and has been frequently reviewed. In brief, it is probably accurate to say that during the first four decades of this century the weight of opinion in pscyhology has stressed genetic endowment as the primary factor in determining one's level of intellectual functioning.

1. Challenge to the Traditional Point of View. Hunt ( 1961, 10-43 ) has prepared a very readable summary of the historical development of a belief in fixed, biologically inherited intelligence.

Binet, who developed the complex tests which best predict intellectual performance, had no such notion about the meaning to be attributed to a score on an intelligence test. He explicitly reacted against the belief in fixed intelligence ( Hunt 1961, 13 ), but through such men as Cattell, who brought the mental testing movement to America, and G. Stanley Hall, with his evolutionary interpretations, the idea that intelligence is an inherited characteristic became commonly accepted in the United States. Findings that group IQ's are highly constant over time, and evidence from foster children and twin studies, were taken as evidence of the stable nature of biologically inherited intellectual ability ( Hunt 1961, 348-349 ).

Hunt cites dissonant evidence, from a variety of studies, which stands in sharp contrast to this belief. The dissonant evidence comes from research on identical twins reared apart, variation of IQ for individuals studied over extended periods of time, effects of school, and effects of orphanages and nursery schools ( Hunt 1961, 19-34 ). This evidence argues strongly for the view that environmental stimulation has an important role to play in the intellectual development of individuals.

Hunt's synthesis is indicative of an emerging point of view which seems to be attracting an increasing number of psychologists. This view point is reflected in a number of theories of intellectual development, all of which take into account the persistent evidence that, regardless of the respective contributions of genetic endowment and environment, the effect of experience must be dealt with, for it does make a difference. Fowler (1962, 128) has commented that a regrettable consequence of the bickering which is characteristic of the extensive literature on the nature-nurture question has been that the arguments have tended to obscure ". . . the fact that the environment does perform an essential role in development" (original emphasis).

2. Intelligence and Environment as Constructs Related to Learning. In the heat of discussion both intelligence and environment have tended to become reified. This concern leads Anastasi (1958, 85) to remind us that:

> . . . it should be remembered that heredity and environment are not unitary influences, but abstractions. Each covers a vast multitude of different factors, all interacting with one another in ever growing complexity throughout the life of the individual.

Anastasi sees questions concerning the relative contributions of heredity or environment to intellectual or personality development as meaningless. She believes the question should be reformulated to direct our attention to ". . . the way in which specific heredity and environmental factors operate in producing specific differences in behavior" (Anastasi 1958, 83).

McCandless ( 1953, 687 ) also cautions that intelligence and environment are abstractions, or constructs. He urges that, if we look at both of these constructs operationally, they fall naturally into the framework of learning theory. Environment may be thought of ". . . as providing the stimuli, many of the cues for drives, the goals and the barriers which result in the organism's learning."

This reaction is based upon an extensive review of the research literature on learning as it is related to social class, infants, foster children, nursery experiences, and mental deficiency. His conclusion parallels the ideas which Hunt ( 1964 ) based on his own study of the literature in these and related areas. With necessary caution, McCandless ( 1953, 687 ) concluded that a tentative assumption could be made that ". . . intellectual level may be a function of the amount of material available for learning; and the types of learning which take place." He notes further that the usual tests of intelligence are highly loaded with problem solving. If, as he suggests, intelligence is subject to the laws of learning, then measured intelligence can be thought of as the ". . . level of problem solving ability which has been reached by the tested person" ( McCandless 1953, 687 ).

While this definition is restricted to intelligence as measured by standardized tests, it is in line with a number of theories concerning intellectual development. Vernon ( 1965, 727 ) has noted the similarity among several attempts to escape the point of view of intelligence as an autonomous entity ". . . which simply matures as children grow up." Vernon (1965, 727) endorses Piaget's characterization of intellectual development as ". . . cumulative formation of more and more complex and flexible schemata." He indicates also that Hebb's concept of phase sequences, and the plans which Miller, Prebam and Galanter discuss, all reflect the basic thesis that mental development proceeds through interaction with the environment. Whether we speak of schemata, phase sequences, or plans, for their development, "They depend both upon environmental stimulation and on active exploration and experiment (Piaget's accommodation and assimilation); i.e., they are formed and organized by use" (Vernon 1965, 727).

As expressed here, then, Vernon's point of view is very similar to that of McCandless. For Vernon (1965, 727), intelligence ". . . refers to the totality of concepts and skills, the techniques or plans for coping with problems, which have crystallized out of the child's previous experience."

3. Emerging Theories of Intellectual Development. It should be observed that these definitions attribute great importance to the interaction between the organism and its environment, with no specific reference to assumptions concerning "capacity for intellectual

development" as a function of biological inheritance. Because the concept of intelligence has traditionally carried connotations of "natural capacity," we may clarify this issue by examining Hebb's (1949) framework for dealing with the biological and the expressed aspects of intelligence.

Hebb feels that two basic components are operative in any intelligent behavior, including the behavior involved in intelligence test performance. The first of these he designates as *intelligence A*, ". . . the innate capacity for development" (Hebb 1949, 294). The second meaning refers to ". . . the functioning of a brain in which development has gone on, determining an *average level of performance or comprehension* by the partly grown or mature person."

While neither of these components is susceptible to direct observation, some direct inferences about *intelligence B* can be made on the basis of behavioral observations. Intelligence tests may then be thought of as a means of *estimating* intelligence B in middle class American culture (Hebb 1949, 299-301).

This way of viewing intellectual development adequately takes into account the two basic aspects of the interaction involved in intellectual development, but it seems that adding an additional concept, and giving it a name, increases the likelihood that some students will accept both *intelligence A* and *intelligence B*, and confer upon them the status of entities.

Perhaps a more satisfactory, and less easily abused, approach would be to view intelligence as a developmental characteristic. Bloom ( 1964, 71 ) suggests this interpretation.

> If general intelligence is a developmental characteristic and is related to the time it takes the individual to learn various concepts, skills, etc., it would seem reasonable that lack of such learning in one time period may be difficult or impossible to make up fully in another period, whereas usually excellent learning in one time period is not likely to be lost in a subsequent period.

Here again we are relating intellectual development to learning. If the pattern of one's intellectual performance is so much a result of the kinds of experiences which he has had, then it would be unreasonable to expect the same type of performance from persons having quite different sorts of experiences as a result of participation in differing cultural milieus.

Here we seem to find an approachment between what psychologists are beginning to say in the fifth and sixth decades of the twentieth century, and an implicit assumption which has played an important role in anthropological thinking for nearly a hundred years. The following statement by Voget aptly illustrates the anthropologist's assumption of the psychic unity of mankind. Voget ( 1960, 944 ) says:

> If man in the primitive world differed from his civilized confreres, it was not because of any qualitative differences in his mind, but because in the civilized world man's mental potential, his intelligence, was

> cultivated and developed in greater degree. In any society a man's intelligence was a product of his experiences, exemplifying the degree to which his intellectual faculty could emerge and thrive in that cultural milieu.

Vernon ( 1965, 727 ) concedes this, and suggests that other cultures may have evolved intelligences that are especially well adapted and better fitted than our own to performance in the kinds of activities that are characteristic of their culture. Even members of subcultures in the United States may develop a different type of intelligence. Vernon ( 1965, 727 ) believes, however, that the type of intelligence which is valued in middle-class American culture "is a kind of intelligence which is specially well adapted for scientific analysis, for control and exploitation of the physical world, for large scale and long term planning and carrying out of materialistic objectives." As an aside we might remark at this point that if the usual descriptions ( e. g., Kluckhohn and Strodtbeck, 1961 ) of Mexican-American value structures are accurate and applicable to Mexican-Americans living in urban areas, these are not the kind of concerns that we would expect to be most highly valued.

The opinion that intelligence tests do predict something that is valued in this culture, and that attempts to produce culture free tests are therefore tangential, is expressed by McCandless ( 1952, 376 ), who suggests that if culture free tests existed they would be of limited usefulness.

Bruner (1964, 1) also considers intellectual development to be dependent upon the problem solving techniques which he learns through contact with his culture. He expresses this view in the following words:

> . . . the development of human intellectual functioning from infancy to such perfection as it may reach is shaped by a series of technological advances in the use of the mind. Growth depends upon the mastery of techniques and cannot be understood without reference to such mastery. These techniques are not, in the main, inventions of the individuals who are "growing up"; they are, rather, skills transmitted with varying efficiency and success by the culture. . . Cognitive growth, then, is in a major way from the outside in as well as from the inside out.

It should therefore not be surprising to find that individuals reared in an ethnic subculture in which certain of these techniques are not likely to be learned might lack strategies that may be vital in a culture which values, or demands, different techniques. We would expect such persons to be placed at a distinct disadvantage in attempting to make the transition into a way of living which places a premium upon skills in the areas of intellectual functioning which Vernon has mentioned. Acculturation in this case might require more than the cognitive activity of connecting a behavioral change (means) with a desired goal (end). Before accepting the assumption that this is the case we may look at some of the empirical evidence of relationships between environmental stimulation and intellectual development.

## Evidence of Environmental Influences on Intellectual Performance

Some of the major reviews of research on foster children and on twins reared in different homes have stressed the priority of heredity in determining the level of an individual's intellectual development. For example, Woodworth ( 1941, 85 ) felt that the most striking of the results of his survey of studies of twins and foster children was the small difference made by environmental differences. He estimated that:

> Not over a fifth, apparently, of the variance of intelligence in the general population can be attributed to differences in homes and neighborhoods acting as environmental factors ( Woodworth 1941, 85 ).

Although these are the results which he personally seemed to find interesting, he does acknowledge that when the twin pairs received very unequal opportunities for education, greater gains and losses were found. We may infer from this that in most cases there were no gross differences in the types of family environments in which most of the separated twins were placed. With the screening policies of adoption agencies being what they are, it seems that we should expect this to be the case. Hebb has examined the data reviewed by Neff ( 1938 ) and reports that in none of the twin pairs in the studies reviewed by Neff was there any large environmental difference ( Hebb 1949, 301-302 ), and from data presented by Anastasi ( 1958, 299 ), Bloom ( 1962, 70 ) concluded that:

> . . . if the identical twins are separated but placed in very similar environments, it is likely that they will have very similar intelligence test scores, whereas, if placed in very different environments, their intelligence test scores will be quite different.

There are data from studies other than investigations of twins and foster children which indicate a relationship between environmental - experimental factors and measured intelligence. Deutsch and Brown ( 1964 ) found that, for their sample of Negro youngsters, those who had pre-school experiences received higher intelligence test scores than those who had not had such experiences. They also reported that the difference was greater for fifth graders than for first graders.

Other indications of the relationship between measured intelligence and opportunities for education are reported in Fowler's ( 1962 ) extensive review of the literature. For example, he reports Woodworth's ( 1941 ) finding of a correlation of .79 between educational differences and differences in IQ scores ( Fowler 1962, 125 ). Lee ( 1951 ), in testing the Klineberg hypothesis, documented improvement in measured intelligence in Negroes who had moved from the South into a Northern city. Karp and Sigel ( 1965 ) reviewed the research literature on the relationships between characteristics of the social environment and learning, as reflected in achievement test scores. They found a steady increase in scores as social, economic, and educational circumstances improved.

These studies deal mostly with the relationship between improvement in measured intelligence and improved opportunities for direct, formal education. The phenomenon is certainly not restricted to conditions involving formal education. Deutsch and Brown ( 1964, 27 ) found IQ differences between Negro and white children at all social levels, but the difference between the white and Negro groups increased with improved social class. In other words, differences between middle class Negroes and whites was greater than between lower class Negroes and whites, although both middle class groups scored higher than the lower classes. The authors of the study hypothesized that the greater differences with improved social class may be related to differences in social participation. That is, the Negro may not be able to improve his opportunity for social participation to a degree equal to his improvement in social class status. Differences were also found between children with a father in the home and those without a father. Children whose father was missing scored lower, and again, the differences were greater for older children. Deutsch and Brown ( 1964, 29-31 ) again suggest limitations in experiences for the children who had not had a father with whom to identify and interact.

Fowler ( 1962, 226 ) has suggested that historical studies of gifted children may furnish some clues concerning early cognitive stimulation, for he found a high degree of association between stimulation from infancy and giftedness. The same proves to be true for children who have been reported as precocious readers ( Fowler 1962, 134 ), and McCandless ( 1953, 688 ) indicates a large discrepancy between the rich opportunities for learning available to bright children, and the paucity of such experiences for dull children.

This brief survey should indicate something of the increasing attention which psychologists are paying to relationships between experience and mental functioning. The need for a more complete understanding of environmental elements which may have a causal influence upon the development of mental processes becomes particularly clear when we realize that racial or social class differences in tested achievement and general school ability tend to become greater as the children grow older. In recent reports Martin Deutsch ( 1965, 80 ) has termed this phenomena the "cumulative deficit." Earlier, Klineberg ( 1963, 200 ) reported the same situation. He said:

> It is as the children get older that differences in test performance appear. Surely this is to be expected on the basis of the cumulative effect of an inferior environment.

Klineberg's own data had to do mainly with the measured intelligence of Negroes, but he has been careful to call attention to similar situations among isolated whites. He cites Sherman and Key's ( 1932 ) data showing changes in Pinter-Cunningham IQ's among "hollow children" in the Blue Ridge Mountains. Average scores shifted from 84 for ages 6-8, to 70 at ages 8-10, and finally to 53 at ages 10-12 ( Klineberg 1963, 200 ). This shift is more dramatic than any reported for racial and ethnic minorities, or for lower social classes in urban areas.

## Need for Studies of Effects of Specific Environmental Factors

We agree with Klineberg that performance differences of the kind we have been discussing could be expected, on the basis of an inferior environment. However, we know very little about specific effects of specific factors within these "inferior environments." The need to learn how various aspects of a child's environment may affect intellectual development, and the need to define the factors operating in sensory deprivation, has been discussed by Hebb ( 1949, 303 ), Bloom ( 1964, 9-10 ), Deutsch and Brown ( 1964, 34 ), Anastasi ( 1948, 83 ) and Klineberg ( 1963, 199 ), among others. As Fowler ( 1962, 125 ) states, most of the studies which have considered the relationships between environment and intellectual development have consisted of correlations between mental test performance and crude environmental indices such as urban-rural differences, educational level of parents, and social or occupational level of parents. Some authors have criticized such broad definitions of social-experiential background, and have attempted to break these broad, inclusive variables down into smaller elements for theoretical (McCandless, 1952) or research (Deutsch and Brown, 1964) purposes. Even for the cross sectional studies which have been so common, greater knowledge of equivalence or non-equivalence of environmental characteristics is necessary if we are to justify comparisons of performance of different groups.

## Effects of Environmental Variation

If Bloom's opinion that ". . . much of what has been termed individual variation may be explained in terms of environmental variation" is correct, then at what period of an organism's development is environment likely to make the greatest impact, and what is the possible extent of this effect?

1. Importance of Early Experience. In considering the first question, we find that both Fowler (1962, 146) and McCandless (1953, 685) concluded from their investigations of research literature that the early years of a child's life are of crucial importance in intellectual development, and Fowler (1962, 146) believes that there is a

> . . . crucial possibility that conceptual learning sets, habit patterns, and interest areas, may well be more favorably established at early than at later stages of the development cycle. Moreover, there may be problems inherent in allowing long-term sets and accumulation of

> knowledge in one area to take precedent over learning in another.

Interestingly enough, Hebb (1949, 289-293) reaches similar conclusions on the basis of his study of differences between the effects of early and late brain injury. He indicates the strong possibility that certain kinds of damage to the brain of an infant affects subsequent IQ to a much greater degree than does similar damage to the brain of a mature person. Early sensory deprivation may have similar effects. Hebb believes such data provides a clue to the role of experience in establishing relatively stable verbal and problem solving abilities.

Bloom (1964, 58-58) provides some equally interesting interpretations of data on intellectual development, as gleaned from studies employing longitudinal intelligence testing. He acknowledges the low correlations between some infant intelligence tests and Binet IQ's in the late teens. However, he demonstrates that when intelligence is conceptualized as a developmental concept the early years emerge as a very critical period in intellectual development. He estimates that ". . . in terms of intelligence measured at age 17, at least 20% is developed by age 1, 50% by about age 4, 80% by about age 8, and 92% by age 13."

## Magnitude of Environmental Effect on Measured Intelligence

If the first four years of life can account for as much as 50 per cent of the development of intelligence, as measured at age 17, then the variety of environmental stimuli available during these early years would be of major significance for the individual's ultimate level of functioning. In further support of this contention we offer Bloom's ( 1964, 71 ) estimate that the magnitude of the extent to which environmental differences may affect IQ may be about 20 IQ points.

We have attempted to indicate that there is a substantial basis in the research and theoretical literature to support further study of the relationship between environmental stimulation and intellectual development. If there is a great possibility that early experiences are especially important in facilitating this development, then we perceive a pressing need to identify specific environmental factors of the cultural environment that may provide, or, being lacking may fail to provide, experiences that will facilitate this development.

## General Nature of Intellectually Stimulating Environments

Hebb ( 1949 ) and Bloom ( 1964 ) are two of the psychologists who have been most concerned with the identification of categories of environmental experience that may be considered for investigation. Hebb ( 1949, 301 ) conjectures that a facilitating cultural environment might, in general, consist of

> . . . exposure to ideas, to books, and to intelligent conversation: the opportunity to acquire common technical knowledge and skills; and exposure to persons with social skills, who are good at getting along with other persons.

In commenting on the vagueness of his own statement, Hebb indicates that this is a rather clear indication of just how much is not known about this matter. Bloom's ( 1964, 9-10 ) suggestions are about equally vague, but two of his students have undertaken the task of identifying significant variables in the environment more precisely. In their doctoral studies Wolf ( 1963 ) and Dave ( 1963 ) surveyed the relevant research and theoretical literature and identified a number of rather broadly defined aspects of experience which they have called environmental process variables. Each of these variables was further defined in terms of process characteristics. On the basis of these constructs they developed an interview schedule by means of which they hoped to determine the nature of experiences which subjects in their sample had had in their home environment. Their procedure and the specific environmental features which were the basis for their investigation will be discussed in greater detail in Chapter III. At this juncture it is pertinent to cite their impressive results. Wolf found a multiple correlation of .76 between the environmental process variables and Henmon-Nelson IQ's, while Dave's correlation between the variables and school achievement was .80. Both of these correlations are considerably higher than those usually found between tested performance and gross indices of environment such as social class status. Bloom refers to these findings in his recent book on Stability and Change in Human Characteristics, and comments that:

> If further research supports Wolf's findings it will become possible to analyze the ways in which an environment can have a relatively direct influence on general intelligence. . . (Bloom, 1964, 79).

## Summary

Anglo-Mexican relationships in Tucson have been generally good, with the exception of brief periods of economic hardship. The Anglo population has usually been tolerant of the cultural differences of the Mexican-Americans, but this ethnic minority ranks well below the median of the dominant society in status factors such as education, income, and occupation. We have regarded these status factors as crude indices of participation in what middle class Anglos consider to be advantages of their society. These discrepancies between social statuses of the dominant population and the Mexican-Americans has been regarded as a crude indication that, for many members of the Mexican-American colony, assimilation is far from complete.

We have suggested that while this is not a study of acculturation in the conventional sense, emerging psychological theories about intellectual development furnish cues that may be helpful in thinking about the factors that may inhibit culture change. Common notions about directed culture change appear to suggest that change will come about if individuals of the target society learn to associate new practices with desired outcomes. In the light of evidence on intellectual development, this view appears to oversimplify the cognitive dynamics of the situation.

In psychology there is abundant evidence to cast doubt upon older notions of stable, biologically determined intelligence. Much of the recent data seem to support the thesis that experience plays an important role in intellectual development. By relating Erasmus' ideas of the cognitive operations involved in culture change to this psychological thesis, we have suggested that the transition from impoverished ethnic minority status to full participation in a problem solving, action oriented society, may require intellectual skills that are not characteristically acquired in the experiential context of the minority group member's life. The implication is that limited development in the areas of intellectual functioning which are valued and required in middle class American culture may prevent some Mexican-Americans from becoming rapidly acculturated.

Further study is needed to determine the extent of the relationship between specific environmental factors and the development of varied aspects of intellectual functioning. The present study follows some of the most promising leads in the identification of those factors of early experience that may be related to the development of intellectual abilities needed for success in school work, and for subsequent functioning in the mainstream of activities in the wider community.

# CHAPTER III

# METHOD

This study originated in a concern over the pattern of school failure that is so common among students from the Mexican-American ethnic group in the Southwest, and with the subsequent depressed social and economic statuses which often characterize these people as adults. The research was designed to investigate characteristics of the home environments which might be related to a child's potential for success in school, and, by inference, in his later functioning in the adult life of the community.

## Subjects

1. The Population. The subjects for this study were selected from 14 elementary schools in the areas of Tucson, Arizona, which are most heavily populated by Mexican-Americans. For many years these schools conducted special classes, designated as 1-C, for children whose English language proficiency was judged insufficient to allow them to profit from instruction in a regular first grade class. After one year in the 1-C program, those students whose ability to speak and understand English was sufficiently developed for first grade work were placed in regular first grade classes. Those whose English

proficiency was judged insufficient at the end of one year in a 1-C class were retained for a second year in the special program.

The original plan of this research defined the population of the study as those six-year-old Mexican-American children who entered school for the first time in September, 1965, and who had been assigned to a 1-C class. On the basis of previous enrollment figures it was anticipated that the population, thus defined, would consist of approximately five hundred Mexican-American six-year-olds. Changes in the placement policies in a few of the schools resulted in somewhat more heterogeneous classes than would have been the case under the old 1-C plan. Therefore, the population was redefined to include Mexican-American children in all classes which were participating in an experimental program developed to improve instruction in the schools of the city's poverty areas. This cooperative venture between the Department of Educational Psychology of the College of Education and Tucson School District Number 1 was entitled "A Project Designed to Afford Optimal Conditions to Promote Intellectual and Personality Growth of Selected Six-Year-Olds."

The children from twenty-six classrooms participating in this program were tested on measures of intellectual maturity and English Vocabulary in order to estimate their potential for success in school. Test results on the Goodenough-Harris Drawing Test and on the Van

Alstyne Picture Vocabulary Test were obtained for 453 children who either had a Spanish surname or who spoke Spanish.

For the purpose of this study the population of Mexican-American pupils was defined as those students possessing both of these characteristics: ( 1 ) Spanish surname, and ( 2 ) the ability to speak Spanish. These criteria were met by 378 children for whom scores on both criterion tests were available. Results on one or the other of the tests were not obtained on 51 children who would otherwise have been included in the population. Table I presents descriptive statistics on the test scores for the entire population for whom complete test data were obtained. The data are further broken down by sex.

TABLE I

DESCRIPTIVE STATISTICS ON CRITERION MEASURES

| | | Van Alstyne | | Goodenough-Harris | | Composite Score | |
|---|---|---|---|---|---|---|---|
| | N | M | SD | M | SD | M | SD |
| Boys | 211 | 69.5 | 15.5 | 91.3 | 14.9 | 80.3 | 12.7 |
| Girls | 167 | 65.6 | 15.5 | 87.8 | 15.2 | 77.2 | 11.4 |
| Total Population | 378 | 67.7 | 14.5 | 89.8 | 15.1 | 78.9 | 12.3 |

In Table I, figures for the Van Alstyne Picture Vocabulary test refer to IQ's and those for the Goodenough-Harris Drawing Test refer to the average of the standard scores for each child's Man and Woman drawings. Each child's Goodenough and Van Alstyne scores were averaged to yield a composite score. The mean and standard deviation of the distributions of composite scores is shown in Table I. Scores for both standardized tests fall well below the norm group median, with the vocabulary scores being much more depressed than the measures from the Goodenough-Harris Test.

2. The Sample. The composite score was used as a single index which could be used in differentiating between children who scored highest on the criterion measures and those who scored lowest. Pupils who scored more than one standard deviation above the mean on the average score were designated as "high potential" children. Those whose average score fell more than one standard deviation below the mean were considered, for the purpose of this study, "low potential" children.

To assure that the two extreme groups would be as distinct as possible, the separate criterion scores entering into the computation of the composite scores were inspected. A few subjects were eliminated because an extremely high or low score on one of the criterion measures overlapped with comparable scores for the opposite group.

Not all children who were identified as belonging to the "high potential" (HP) or "low potential" (LP) groups were included in the final samples. The goal was to obtain interviews with families of the highest ten per cent and the lowest ten per cent of the population. In order to achieve this, interviewers began their work by contacting the families of children whose composite score was among the very highest or very lowest in the HP and LP groups. Subject selection began at the opposite extremes of the continuum of potential for school success, as defined herein, and proceeded toward the center of the distribution.

A total of 86 families was interviewed in this manner. The procedure for recording the interviews is described later in this chapter. Interviews were obtained with the families of 42 HP children, and 45 LP children. The high noise level on some of the tape recordings of the interviews made it impossible to transcribe sufficient data to be used in rating the home environments. This loss resulted in a final N of 38 for the HP sample, and an N of 42 for the LP sample.

In summary, an HP sample of 38 and an LP sample of 42 were selected from a population of 378 Mexican-American six-year-olds who had Spanish surnames, and some command of the Spanish language. The composite score used in the selection of the samples was obtained by averaging for each child the IQ of the Van Alstyne Picture Vocabulary Test and the standard score for the Goodenough-Harris Drawing Test.

## Criterion Measures

The measures used in selecting the high potential and low potential groups have been mentioned in the preceding section. Although both tests are open to criticism, they both have advantages which made them useful for our purposes.

1. The Goodenough-Harris Drawing Test is based upon the earlier Goodenough Draw-a-Man Test, which has been widely used in studies of the intellectual status of young children (Harris 1963, 1). This test was chosen because it appeared to serve at least one of the two functions seen as necessary in selecting two extreme groups from the range of school potential represented in our population. The test has been used with children representing a variety of cultural backgrounds, and while no claim is made that the results of the test do not reflect cultural differences, the instrument appears to place non-middle class Americans at a smaller disadvantage than do conventional intelligence tests with their high verbal and problem solving loadings. Dennis (1940, 343-346) found that Hopi children averaged higher scores on the Goodenough Draw-a-Man Test than the American norm groups. Dennis interprets this performance in terms of the traditional emphasis upon graphic representation, especially among males, in Hopi culture. Few of the pictures drawn by Hopi six-year-olds could be distinguished from drawings of six-year-old American children. This fact led Dennis to suggest that there is less cultural differentiation in the performance of younger children than of older individuals (Dennis 1940, 347). Since the children in the present research were

six-year-olds, and since a number of parents in the pilot interviews for the study indicated their children's interest in drawing, it was believed that this test might be useful in differentiating between two groups of Mexican-American children, in terms of their potential for success at school related tasks. With this measure of potential the language factor is eliminated.

Harris (1963, 133) has commented that "It has been affirmed that although the test may be unsuited to comparing children across cultures, it still may rank children within a culture according to relative intellectual maturity" (original emphasis). Such a comparison may be considered to be our specific purpose in the use of the test.

Reliability coefficients for the Harris revision of the Goodenough scale range from .91 to .98 (Harris 1961, 91). In the present study 34 drawings were scored independently by two judges, after an initial period of training. The correlation between the two sets of scores was .88. After additional training a second sample of 30 drawings was scored independently by the same two scorers. For this set of scores a correlation of .98 was achieved.

Concurrent validity for the 1926 Goodenough scale has been established by a number of studies. Correlations between the Goodenough scale scores and the Stanford-Binet mental ages range from

.26 to .80. In a study of the relationship between the Goodenough IQ's and WISC full scale scores, the correlation was .47 (Harris 1961, 96-97). Harris (1961, 99) summarizes evidence to support Goodenough's contention that, in part, the drawing test reflects ability to form concepts. His data also suggest that ". . .the Draw-a-Man test is not more allied with performance than with verbal abilities (1961, 99). The 1926 scale and the revised scales correlate at .97 for the drawings of six-year-olds (Harris 1961, 99).

2. The Van Alstyne Picture Vocabulary Test was selected for use in conjunction with the Goodenough-Harris Test in determining potential for school success. While the drawing test might tap differences in relative intellectual maturity, a child's knowledge of English would certainly be another factor that would have an effect upon his performance in the school situation. Some proficiency in English, relatively speaking, was assumed to give pupils an initial advantage in school. The lack of English might not only place a child at an initial disadvantage, but the effect of an extreme English language deficiency might also have a cumulative effect on failure.

In view of the number of children to be tested, an easily administered, relatively short screening instrument was desired. Mary Haworth, writing in the Sixth Mental Measurements Yearbook, has stated that ". . .a good case can be made for the test [Van Alstyne], and for picture vocabulary tests in general, if their purpose is specifically stated as the measurement of comprehension of the spoken word, without inferring the equivalence to mental ability in general" (Buros 1965, 538).

In using this test to select our groups the purpose was to obtain an index of relative performance on a sample of English vocabulary. The IQ was used rather than raw score or mental age to reduce differences resulting from chronological age.

Van Alstyne (1961, 13-14) presents correlations between her Picture Vocabulary Test scores and a number of standard intelligence measures as evidence of concurrent validity. For five-year-olds, an r of .60 is reported between the Van Alstyne and Stanford-Binet IQ's. The correlation coefficient between Van Alstyne and Lorge Thorndike: L-I IQ's is .59. Split-half reliability for six-year-olds is .71.

## Instruments Used in Investigating the Home Environments

1. The Index of Status Characteristics. One hypothesis of this study suggested that the relationship between environmental factors and potential for school success would be higher than the relationship between social class status and school potential. The Index of Status Characteristics developed by Warner and his associates (1949) was used as a means of quantifying the social class status

of the families investigated. Since the measures were to be used to provide an index of relative standing, no attempt was made to apply class labels to the families. All subjects were from the same ethnic group, so it was not necessary to apply the refinements which Warner (1949, 186-199) suggests for the evaluation of the status characteristics of ethnics. The status characteristics considered were Occupation (revised scale), Source of Income, House Type (revised scale) and Dwelling Area. The possible range of summed weighted ratings is from 12 to 84, inclusive. Smaller numerical ratings reflect higher social class status.

Concurrent validity for the Index was established in a study by Warner and his associates who found a multiple correlation of .97 between the four characteristics of the Index and the more detailed social class placements accomplished by means of the technique of Evaluated Participation (1949, 174). They also concluded that the Index yields an accurate prediction of social class on the basis of the correlation (.97) between I.S.C. and E.P. for Old Americans in the Jonesville studies (1949, 209). They present this as evidence of the reliability of the Index, with the caution that the cases involved in this correlation were used as the basis for refinement and validation of the Index. Subsequent applications of the index would therefore not be expected to yield such a high correlation (1949, 201).

2. The Environmental Process Variables. The investigations of Dave ( 1963 ) and Wolf ( 1963 ) were cited in Chapter II as two of the more successful attempts to evaluate specific characteristics of the home environments which may have a causative relationship to school achievement ( Dave 1963 ) and to measured intelligence ( Wolf 1963 ). These investigators identified six general features of intellectually stimulating environments on the basis of theoretical and empirical literature in the areas of learning, motivation, child development, and related topics. They called these features "Environmental Process Variables," and defined each such variable by enumerating specific factors which were designated as "Environmental Process Characteristics."

Considering the high relationships between environmental measures and measures of intelligence and academic achievement, the instruments with which these environmental studies were conducted were chosen for use in investigating the environmental stimulation available in the homes of the Mexican-American children in the two samples selected for this study. On theoretical grounds, and on the basis of a pilot study with a number of families similar to those in the samples, the investigator decided that some additions should be made to the list of variables used in the research cited above. The variables used in the investigations conducted by Dave ( 1963 ) and Wolf ( 1963 ) are described below. Hereafter we will refer to the variables used in these two investigations as the original Environmental Process Variables, and the original Environmental Process Characteristics. Following the discussion of these original variables and their associated characteristics, the variables added for the purposes of this investigation will be discussed.

a. Identification of the Original Environmental Process Variables. Many studies have shown that a variety of home factors are involved in the development of motivational factors that are associated with learning and achievement (Dave 1963, 25). Among the available evidence is the finding of McClelland and his associates, who produced evidence of relationships between social class or cultural emphasis and achievement (McClelland 1953), and Stendler's findings of differences in parental attitudes toward achievement, and variations in achievement of grade I children (Stendler 1950). On the basis of such evidence a variable called "Achievement Press" was postulated. This variable was further defined in terms of a number of Process Characteristics which comprise the variable. The Process Characteristics for Achievement Press are listed by Dave (1963, 28) as follows:

Parental aspirations for the education of the child
Parent's own aspirations
Parent's interest in academic activities

Social press for academic achievement

Standards of reward for educational attainment

Knowledge of the educational progress of the child

Preparation and planning for the attainment of educational goals

The second of the original Environmental Process Variables is "Language Models." Dave (1963, 29) calls attention to the vital role of language as a medium of thought processes, and cites evidence leading to the conclusion that a child's language usage ". . . depends upon the kinds of language models available to him in the home at the initial stages of his language development." Bernstein has postulated social class differences in language usage and has related these differences to variation in educational competence (1958). The "Language Model" variable does not provide for a detailed study of the differential factors which Bernstein postulated, but defines the Environmental Process Variable of "Language Models" more simply in terms of the following Process Characteristics:

Quality of language usage of the parents

Opportunities for the enlargement and use of vocabulary and sentence patterns

Keenness of the parents for correct and effective language usage (Dave 1963, 31)

The third of the original Environmental Process Variables has been titled "Academic Guidance." This variable includes more than parents helping with homework. As Dave ( 1963, 31 ) says, "It includes an awareness of the parents regarding the educational progress of the child, helping him in appraising his own strengths and weaknesses, providing suggestions for the nature of work necessary for balanced educational progress, and developing in him a sense of accomplishment."

The Process Characteristics of this variable are:

Availability of guidance on matters relating to school work

Quality of guidance on matters relating to school work

Through family activities a child is exposed to a variety of experiences which may stimulate intellectual development. The importance of such experiences has been reviewed in Chapter II of this study. Dave ( 1963, 35 ) defines the fourth Environmental Process Variable, "Activeness of Family," by listing four Environmental Process Characteristics. These are:

The extent and content of indoor activities of the family

The extent and content of outdoor activities during weekends and vacations

Use of TV and other such media

Use of books, periodical literature, library and such other activities

"Intellectuality in the Home," the fifth original Environmental Process Variable, is concerned with the complex environmental stimulation that may contribute to ". . . higher cognitive processes and mental skills important in learning" (Dave 1963, 36). This aspect of the environment ". . . determines the extent of stimulus-induced maturation and the development of mental skills including conceptual thinking, problem solving, and 'transformation'."

This variable is defined by the following Environmental Process Characteristics (Dave 1963, 37):

Nature and quality of toys, games, and hobbies made available to the child

Opportunities for thinking and imagination in daily life

The sixth, and last, of the original Environmental Process Variables, is identified by the label "Work Habits of Family." Dave (1963, 38) has cited empirical evidence that habits of industry, which are essential to academic success, have their origin in the home. On the basis of the literature relating work habits to academic achievement, the following process characteristics were proposed:

Degree of structure and routine in home management

Preference for educational activities over other pleasurable activities

These variables and the characteristics which define them formed the basis for the investigations conducted by Dave ( 1963 ) and Wolf ( 1963 ). For the purposes of the present investigation, additional process characteristics were postulated for some of the original Environmental Process Variables, and three new Environmental Process Variables were proposed.

b. Identification of Additional Variables. The original process characteristics which defined the Environmental Process Variable of Achievement Press have been supplemented by two additional characteristics in this investigation of the environmental backgrounds of Mexican-American children. The added characteristics are identified as follows:

Parental perception of vocational alternatives
for the child

Parental perceptions of vocational alternatives
for the head of family

Since the range of occupations in which the Mexican-Americans in the community are engaged is quite restricted, it is very possible that a parent might verbalize high aspirations for himself or for his children, but may at the same time perceive these aspired goals as realistically unobtainable. During several pilot interviews, some Mexican-American mothers mentioned relatives who had finished high school, but who were now working as garbage collectors, or in the mines. The feeling seemed to be that these boys were therefore no better off than those who had not finished school. When questioned concerning the reasons for this, they remarked that it had occurred to these boys to seek other kinds of work.

In view of these facts it seemed advisable to take the subjects' perceptions of what constituted realistic aspirations into consideration in evaluating the Environmental Process Variable of Achievement Press.

Three process characteristics have been added to the three original ones for the Environmental Process Variable of "Language Models." The new Environmental Process Characteristics for this variable are:

Proportion of Spanish to English spoken in the home

Quality of Spanish spoken in the home

Degree of verbal interaction

The first two characteristics listed above were proposed to take into account the fact that all families in the sample for this study speak some Spanish in the home. The Spanish spoken is assumed to vary in quality from home to home as well as in the extent of its use. Youngsters who begin school with relatively greater proficiency in the use of English should be at some advantage over similar youngsters who have developed little or no proficiency in English prior to entering school.

The relative extent to which Spanish and English are used is not the only special characteristics of the home environment that seems pertinent to the variable of "Language Models" for our Mexican-American subjects. For those who speak Spanish, the quality of the Spanish spoken should bear the same relationship to cognitive processes as does the quality of English for English speaking people. Other factors being equal, the child who is in a position to learn good quality Spanish, rich in sentence structure, vocabulary, use of imagery, and other factors which characterize what Bernstein (1961) calls "formal language" should be better equipped with the cognitive skills required in the learning of school skills than the child who learns "public" Spanish at his mother's side.

Numerous studies (e.g., Hess and Shipman 1965, Deutsch 1960, Bernstein 1961, John 1965) have indicated that the nature of linguistic interaction between parents and their children differs for different ethnic groups, or for people of different social classes. Process characteristic "3e" therefore refers to the amount and type of verbal interaction characterizing parent-child relationships, and to the amount of explaining and questioning which parents provide for their children.

One process characteristic has been added to the Environmental Process Variables of "Intellectuality in the Home." This characteristic has been designated by the phrase "Range of Variation in Materials available for play activities." This characteristic is related to another factor in this cluster, "Nature and Quality of Toys, Games, and Hobbies Available to the Child." However, the added characteristic more specifically calls attention to the variety of objects which a young child has had at his disposal, and which might contribute to assimilation and accommodation in the construction of new intellectual schemata (Hunt 1961, 258-259).

For the purposes of this study three additions have been proposed to supplement the original six Environmental Process Variables investigated by Wolf (1963) and Dave (1963). These variables are designated as Identification with Models, Range of Social Interaction, and Perception of Practical Value of Education.

The Environmental Process Variable of "Identification with Models" was postulated because there is some indication that Mexican-American children tend to come in contact with a rather restricted range of behavioral models. Many Mexican-Americans who become successful, by Anglo middle-class standards, appear to dissociate themselves from their ethnic background. Broom and Shevsky (1952, 154) have stated that:

> Unlike other important American ethnic groups a middle class providing service functions is virtually non-existent. Those individuals who have advanced substantially either economically or in educational status, have tended to lose their identity with the group and have moved away from the ethnic enclaves which are entirely lower class.

On the basis of Hunt's ( 1961 ) discussion, we would suspect that having limited opportunities to imitate a variety of adult models would have the same sort of restricting effect on development as would limitations of space or a lack of experience with a wide variety of objects. As Hunt ( 1961, 275 ) says:

> *In the preconceptual phase of the second period*, when the child is diverting a major share of his time to playful imitation, having a variety of models to imitate which supply the basis for later intellectual skills would appear to be important ( original emphasis ).

Hunt suggests that even models seen on television may be important in this respect. He acknowledges that many of these models are phony.

> . . . but even so, it may be that seeing them may be forcing accommodative modifications in the central processes of children that will hasten the development of those logical operations and the systems of information processing that appear to underlie intelligence ( Hunt 1961, 277 ).

The Process Characteristics for this Environmental Process Variable are:

Range of variation in models for identification

Degree of identification with achievement models

"Range of Social Interaction" has been postulated as an eighth Environmental Process Variable. Warner ( 1949, 186 ) has remarked that ". . . ethnicity has a definite effect - usually a limiting one - on social participation in the community." Such limitations would be expected to restrict the range of intellectually stimulating experiences available to the members of a family. In his study of Mexican-American sodality membership patterns in Tucson, Officer ( 1964 ) found no discrimination against Mexican-Americans in the various sodalities of the community. Nevertheless, lower-class Mexican-Americans do not appear to be well represented in the sodality structure of the community. Therefore, the Process Characteristics which define this Environmental Process Variable are:

> Variation in Sodality Membership and degree of actual participation in sodalities, by family members
>
> Range of interpersonal and commercial contacts in the community

The final Environmental Process Variable of the revised outline has been called "Parental Perception of the Practical Value of Education." This variable is related to "Achievement Press," but here our attention is focused upon what Erasmus ( 1961 ) has called "frequency interpretation." For example, among Mexican-American farm workers in Arizona, Padfield and Martin ( 1965, 177 ) found no relationship between formal schooling and incidence of skilled farm jobs. One would not expect these farm workers to perceive formal schooling as having much practical value in helping them to obtain the better farm jobs. Comparable information on the relationships between formal education and desirable jobs is not available for the urban areas but we would expect that a pattern of perceptions, based on experience and perhaps upon local legend as well, could be intensified among the urban ethnic groups. If school work is seen as having little practical value, one would expect little parental encouragement for the development of intellectual skills needed for school-related tasks.

The characteristics which define this Environmental Process Variable are:

> Parental perception of the practical value of school, as seen in experiences of selves and peers
>
> Parental perception of practical value of school for the child

Table II presents a complete outline of the Environmental Process Variables and their associated process characteristics. The table also indicates the items in the interview schedule which are designed to elicit data for use in rating a family's standing on each process characteristic. In Table II, Arabic numerals refer to the nine Environmental Process Variables, and lower case letters designate the specific Environmental Process Characteristics which

## TABLE II

## OUTLINE OF ENVIRONMENTAL PROCESS VARIABLES AND THEIR ASSOCIATED CHARACTERISTICS, INDICATING RELATED ITEMS ON THE INTERVIEW SCHEDULE

| Process Variables and Characteristics | Interview Schedule Items |
|---|---|
| 1. Achievement Press | |
| a. Parental aspirations for the education of the child | 1, 2, 31, 32, 34, 37, 62, 73, 74, 49 |
| b. Parents' own aspirations | 33, 34, 35, 36, 37, 58, 61, 63, 73, 74 |
| c. Parents' interest in academic activities | 3, 9, 19, 40, 46, 66 |
| d. Social press for academic achievement | 38, 39 |
| e. Standards of reward for educational attainment | 2, 42, 45 |
| f. Knowledge of the educational progress of the child | 1, 44, 48 |
| g. Preparation and planning for attainment of educational goals | 40, 41, 43, 45, 47, 55 |
| *h. Parental perceptions of vocational alternatives for child | 57, 43 |
| *i. Parental perceptions of vocational alternatives for head of family | 34, 36, 58 |
| 2. Language Models | |
| a. Quality of language usage of parents | Not applicable |
| b. Opportunities for enlargement and use of vocabulary and sentence patterns | 3, 5, 12, 20, 21, 22, 23, 24, 26, 29, 63 |
| c. Keenness of parents for correct and effective language usage | 12, 14, 15, 16, 29, 30 |

Table II--Continued

| Process Variables and Characteristics | Interview Schedule Items |
|---|---|
| *d. Proportion of Spanish to English spoken in home | 59 |
| *e. Quality of Spanish spoken in home | Not applicable |
| *f. Degree of Linguistic Interaction | 12, 60 |
| 3. Academic guidance | |
| a. Availability of guidance on matters relating to school work | 17, 18, 45, 48, 51 |
| b. Quality of guidance on matters related to education | 1, 17, 18, 19 |
| c. Availability and use of materials and facilities related to school work | 7, 10, 13, 14, 15, 16, 18, 62, 63 |
| 4. Activeness of Family | |
| a. Extent and content of indoor activities of the family | 3, 6, 21, 22 |
| b. Extent and content of outdoor activities, weekends and vacations | 3, 4, 66 |
| c. Use of TV and other such media | 27, 28 |
| d. Use of books, periodical literature, library, and other facilities | 3, 5, 6, 10 |
| 5. Intellectuality in the home | |
| a. Nature and quality of toys, games, and hobbies available to child | 8, 9, 63 |
| b. Opportunities for thinking and imagination in daily life | 3, 11, 12, 20, 63 |

Table II--Continued

| Process Variables and Characteristics | Interview Schedule Items |
|---|---|
| *c. Range of variation in materials available for play activities | 63, 9 |
| 6. Work habits in family | |
| a. Degree of structure and routine in home management | 51, 52, 53 |
| b. Preferences for educational activities over other pleasurable things | 47, 50, 51, 54, 55, 56 |
| *7. Identification with models | |
| *a. Range of variation in models for identification | 23, 24, 25, 39, 64, 65, 67, 71, 72 |
| *b. Degree of identification with achievement models | 23, 24, 39, 64, 65 |
| *8. Range of social interaction | |
| *a. Variation in sodality memberships and participation in sodalities by family members | 66, 67 |
| *b. Range of interpersonal and commercial contacts in community | 67, 69, 70 |
| *9. Perception of practical value of education | |
| *a. Parental perception of practical value of school, as seen in selves and contemporaries | 61, 73, 74 |
| *b. Parental perception of practical value of schools for child | 46, 62, 73, 74, 49 |

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*Indicates new process variables and characteristics added to Dave's formulation for the specific purposes of this study.

define each of the Process Variables. Variables and characteristics which have been added to the list of factors investigated by Dave and Wolf are marked by an asterisk.

## Instruments Used to Describe Home Environments

The basic instruments used here were an interview schedule and a series of rating scales.

1. The Interview Schedule. In their investigations, Dave and Wolf established criteria for the evaluation of each of their Environmental Process Characteristics. These were used in constructing a set of lead questions and probe questions which could be used to gather data relating to each item on the interview schedule (Dave 1963, 43-44). Most questions were used in their original form, although some have been reworded or paraphrased because of difficulties encountered in the use of certain questions during pilot interviews. Some questions from the original schedule consistently failed to elicit responses and these items were dropped from the final form of the schedule. For example, the question, "Do you ever give your child problems to solve for himself?" required excessive explanations, and even then was unproductive. This in itself may be significant, but the question was eventually discarded because no material relevant to it appeared in typescripts of the interviews.

A number of new questions were added to the interview schedule. These questions were designed, following the pattern set by Dave and Wolfe, to elicit data on the new Environmental Process Characteristics. The form of the interview schedule which was finally used in the family interviews is included in Appendix A. Table III indicates which process characteristics are related to each of the items in the interview schedule.

### 2. The Rating Scales

Rating scales, with values ranging from one through nine, were constructed as a means of evaluating each of the Environmental Process Characteristics. The rating scales presented in Appendix B include the original 21 scales used by Dave and Wolf, some in modified form, plus 12 rating scales which have been added to provide ratings for the new process characteristics.

The interview schedule and rating scales should be taken together in considering the validity of the data gathering devices used in this study. The original instruments may be considered to have high concurrent validity on the basis of the work of Dave's ( 1963 ) correlation of .80 with academic achievement and Wolf's ( 1963 ) correlation of .76 with intelligence. The validity and reliability of the instruments, as revised for use in this research, is discussed in Chapter IV.

## TABLE III

## INTERVIEW SCHEDULE ITEMS AND THE ENVIRONMENTAL PROCESS CHARACTERISTICS FOR WHICH THEY PURPORT TO ELICIT DATA

| Interview Schedule Item Number | Process Characteristics | Interview Schedule Item Number | Process Characteristics |
|---|---|---|---|
| 1. | 1a, 1f, 3b | 31. | 1a |
| 2. | 1a, 1e | 32. | 1a |
| 3. | 1c, 2b, 4a, 4b | 33. | 1b |
| 4. | 4d, 5b | 34. | 1a, 1b, 1i |
| 4. | 4b | 35. | 1b |
| 5. | 2b. 4d | 36. | 1b, 1i |
| 6. | 4a, 4d | 37. | 1a, 1b |
| 7. | 3c | 38. | 1d |
| 8. | 5a | 39. | 1d, 7a, 7b |
| 9. | 1c, 5a, 5c | 40. | 1c, 1g |
| 10. | 3c, 4d | 41. | 1g |
| 11. | 5b | 42. | 1e |
| 12. | 2b, 2c, 2f. 5b | 43. | 1g, 1h |
| 13. | 3c | 44. | 1f |
| 14. | 2c, 3c | 45. | 1e, 1g, 3a |
| 15. | 2c, 3c | 46. | 1c, 9b |
| 16. | 2c, 3c | 47. | 1g, 6b |
| 17. | 3a, 3b | 48. | 1f, 3a |
| 18. | 3a, 3b, 3c | 49. | 1a, 9b |
| 19. | 1c, 3b | 50. | 6b |
| 20. | 2b, 5b | 51. | 3a, 6a, 6b |
| 21. | 2b, 4a | 52. | 6a |
| 22. | 2b. 4a | 53. | 6a |
| 23. | 2b, 7a, 7b | 54. | 6b |
| 24. | 2b, 7a, 7b | 55. | 1g, 6b |
| 25. | 7a | 56. | 6b |
| 26. | 2b | 57. | 1h |
| 27. | 4c | 58. | 1b, 1i |
| 28. | 4c | 59. | 2d |
| 29. | 2b, 2c | 60. | 2f |
| 30. | 2c | 61. | 1b, 9a |

Table III--Continued

| Interview Schedule Item Number | Process Characteristics |
|---|---|
| 62. | 1a, 3c, 9b |
| 63. | 1b, 2b, 3c, 5a, 5b, 5c |
| 64. | 7a, 7b |
| 65. | 7a, 7b |
| 66. | 1c, 4b, 8a |
| 67. | 7a, 8a, 8c |
| 68. | 8b |
| 69. | 8c |
| 70. | 8c |
| 71. | 7a |
| 72. | 7a |
| 73. | 1a, 1b, 9a, 9b |
| 74. | 1a, 1b, 9a, 9b |

3. Observations and Questionnaire. In addition to the data obtained through family interviews, subjects were asked to provide information about selected characteristics of their families. The Family Data Questionnaire used for this purpose is presented in Appendix C. Interviewers were also asked to make certain observations in the homes in which the interviews were conducted. The check-list used to systematize these observations included as Appendix D.

## Procedures

1. Pilot interviews were conducted to refine the instruments used in this investigation. The interview schedule consisted of all of the questions from the original interview schedule, plus a number of questions which had been constructed to elicit data relating to the 12 process characteristics which had been added to those used in the investigations conducted by Dave ( 1963 ) and Wolf ( 1963 ). For the pilot interviews, five families were selected. These families were similar in most respects to families in one or the other of the samples which had been planned. The focused interview procedure described by Dave ( 1963, 42-43 ) was followed. This procedure provides comparability of information through the use of an interview schedule, but allows the interviewer freedom to follow his own judgment in probing for needed information to a greater extent than a completely

standardized interview would allow. The probes provided for each item on the interview schedule may be modified as necessary as the interviewer seeks relevant data. All five of the pilot interviews were conducted by the writer. Four were conducted in English and one through the use of a Spanish speaking interpreter.

The interviews were tape recorded and complete typescripts were made from the tapes. The interviews were then rated twice, allowing approximately three weeks between the ratings. Rank difference correlations were computed for all 33 process characteristics, and those ratings that displayed inconsistency in the rater's judgment were used as a basis for reworking parts of both the interview schedule and the rating scales.

2. Interviews with families in the samples. The procedures used in selecting the samples for the study were discussed earlier in this chapter. In brief, the standard score on the Goodenough-Harris test and the IQ score on the Van Alstyne test were averaged to yield a composite score which could be interpreted as a crude index of the child's relative standing in terms of familiarity with a sample of English vocabulary, and relative intellectual maturity. A Pearson product moment correlation between paired scores on the two tests was .37, indicating that the tests did measure somewhat different abilities. The IQ score for the Van Alstyne Test was used simply

because this score takes the child's chronological age into account.

The principal family member interviewed was the mother or mother substitute in each home. To assure the best possible rapport, Mexican-American girls were trained to do the interviewing. Training was provided in a number of small seminars in which the theoretical bases for the variables were discussed and related to the interview items which were designed to elicit relevant information. The transcripts from the five pilot interviews were used as illustrative examples. On the basis of their familiarity with the cultural background of the Mexican-American ethnic group, the interviewers suggested some changes in a few of the items on the interview schedule.

Following the initial training sessions, each worker recorded one interview. These interviews provided additional material for training seminars. Instances in which an interviewer may have asked a question in a leading manner were pointed out, and areas where the interviewer should have probed for additional information were identified.

All interviews were recorded on small, battery-powered tape recorders, and complete typescripts were made from the tapes. Whenever possible the interviews were conducted in English to facilitate the typing of transcripts. In the majority of the cases it was found that the interviews had to be conducted in whole or in part in Spanish.

The typescripts were prepared by bilingual typists who were instructed to render as literal a translation as possible. Grammatical errors and organizational weaknesses in the language of the Spanish-speaking subjects was to be paralleled as closely as possible in the English transcript. The accuracy of the translations was spot checked by giving the same tape to two different typists who worked different hours. In this way it was found that the translations were highly consistent.

3. Ratings of the Interviewers. Following the preparation of each typescript, the interview protocol was marked to identify the material pertaining to each item on the interview schedule. Multiple copies of each question were typed on five by eight sheets of paper. All material relating to one variable was stapled together. For example, by examining Table II, it may be seen that a packet to be used in rating Process Characteristic "1a" would include interview material elicited by ten items on the schedule. This procedure made it unnecessary to leaf back and forth through the entire protocol in order to rate each characteristic.

The composite rating for each Environmental Process Variable was obtained by averaging the ratings of the characteristic for that variable.

The ratings were done by the investigator and a graduate student in educational psychology. Before proceeding with the ratings, a training session was held to assure familiarity with the theoretical bases for the ratings. Each rater then judged five protocols independently. These five interviews were then reviewed in detail in training sessions. In some areas where ratings were rather widely disparate, an attempt was made to define the criteria and the points on the rating scales more specifically. Then a second group of five protocols were rated independently, and the rank difference correlations for the first and second attempts compared. The range of variation in the ratings was, for the most part, restricted to the lower half of the rating scale values. This restricted range made high correlations difficult to obtain but, after the training periods, ratings of the two judges rarely deviated by more than one point from one another on any one characteristic. Additional training failed to reduce this deviation appreciably. Rater reliability data for the entire group of interviews are presented in Chapter IV.

An exception to this method of rating was made for the characteristic of "Quality of English Language" and "Quality of Spanish Language." Each interviewer rated the language of each subject whom she had interviewed. The tape was then given to one of the other interviewers who provided an independent rating by listening to a five to ten minute sequence from the tape. Training was provided for this work, and as in the case of the other ratings, the score used in the analysis of these characteristics was the average rating.

## Analysis of the Data

The hypothesis of no difference between two samples was tested with Hotelling's $T^2$ procedure. This statistic is a generalization of $t^2$ (Hotelling 1931) and makes possible the comparison of two groups on a number of independent variables.

The hypothesis that the relationship between potential for school success and the Environmental Process Variables would be higher than the relationship between school potential and social status was tested by comparing the correlations between the criterion score averages and the EPV ratings, and the correlation between these criterion score averages and the ISC values. The difference between these two correlations was tested for statistical significance.

In addition to the statistical analysis, a content analysis of the interview protocols was performed. The results of the content analysis are described in Chapter V.

# CHAPTER IV

# RESULTS

One analysis of our data utilized a multivariate test of the significance of environmental differences between two samples of Mexican-American children. Several first order correlation coefficients were also computed to estimate the reliability of the instruments used and to permit a comparison of the relationship between environmental ratings and potential for success in school with relationship between school potential and a conventional measure of social class status.

## Validity and Reliability of the Instruments

1. Validity. On the basis of the theoretical and empirical evidence for relationships between characteristics of the environment and intellectual development, as reviewed in Chapter II, the interview schedule was assumed to have content validity. Both the questions on the interview schedule (See Appendix A) and the criteria for judging the environmental process characteristics (See Appendix B) were developed specifically to elicit data that are theoretically and/or empirically related to intellectual performance. Other instruments for the measurement of environmental characteristics are not available to establish

concurrent validity for the instruments used in this research.

2. Reliability. The procedure used in judging the interview protocols on each of nine Environmental Process Characteristics was explained in Chapter III. Ratings were made for each characteristic on a scale of one through nine and the ratings of the two judges were averaged. Average ratings were rounded to two decimal places and multiplied by 100 to yield the measures used in the analysis.

To determine the reliability of the raters' judgments, ratings of the two judges were correlated for each variable and for the composite rating, which was the sum of the ratings on the nine Environmental Process Variables. Table IV presents the inter-rater reliability coefficients for these variables.

TABLE IV

INTER-RATER RELIABILITY COEFFICIENTS FOR
ENVIRONMENTAL PROCESS VARIABLES

| Environmental Process Variable | Coefficient |
|---|---|
| Achievement Press | .86 |
| Language Models | .91 |
| Academic Guidance | .85 |
| Activeness of Family | .84 |
| Intellectuality in the Home | .82 |
| Work Habits in Family | .77 |
| Identification with Models | .74 |
| Range of Social Interaction | .90 |
| Perception of Practical Value of Education | .76 |
| Composite Rating | .93 |

All correlations are sufficiently high to indicate that the instruments do produce consistent measurements of environmental variables.

Environmental Differences

The major problem of this study was to test the hypothesis that there is no difference between the environmental backgrounds of our two two samples of Mexican-American six-year-olds. The two groups of children were selected on the basis of their predicted potential for success in school, as measured by the criterion tests discussed in Chapter III. The 38 children who tested high on these measures are designated by the initials HP. The 42 children at the opposite end of the continuum of potential for school success are referred to by the initials LP. For purposes of convenience, these designations also apply to the families or parents of these children.

The statistic used to test the hypothesis of no difference between the groups was Hotelling's $T^2$ (Hotelling 1931). This statistic is:

> A generalisation by Hotelling (1931) of 'Student's' distribution to the multivariate case, and like 'Student's' t, available to test the significance of a broad class of statistics including means and differences of means, regression coefficients and their differences (Kendall and Buckland 1957, 130).

Nine environmental measurements were obtained for each of the 80 subjects in the combined groups. In addition, an Index of Status

Characteristics ( Warner 1949 ) was computed for each family. As Johnson ( 1959, 343 ) indicates, the traditional method for differentiating between groups on a number of measurements ". . . is to compute the significance of the difference between the means of the groups taking each character separately." He goes on to say that:

> This method is inefficient in that it does not make possible the evaluation of the relative amount of information for differentiation provided by the several measurements; neither does it combine the information taking into account the interrelations, if they exist, between the characters dealt with" ( 1949, 343-344 ).

These considerations led to the use of the $T^2$ statistic, which makes it possible to discriminate between the two groups on the basis of the total set of nine environmental variables. In addition to providing a measure of the significance of a difference between the groups, this procedure yields a discriminant function coefficient for each variable. According to Hoel ( 1962, 179 ), a linear discriminant function makes it possible ". . . to find a linear combination of those various measurements whose distribution. . . [for the two groups] would possess very little overlap."

Table V presents the group means and the differences between the means for each measure obtained on the subjects. Column 5 gives the discriminant function coefficients for the first test of the difference between the groups, utilizing the nine Environmental Process Variables. Column 6 shows the resulting discriminant function coefficients when the test for differences included the Index of Status Characteristics in addition to the nine Environmental Process Variables.

### TABLE V

### SUMMARY OF COEFFICIENTS FOR TWO DISCRIMINANT FUNCTIONS WITH TEST STATISTIC $T^2$ AND MEANS FOR EACH VARIABLE

| Variable (1) | HP Mean (2) | LP Mean (3) | D (4) | First Function (5) | Second Function (6) |
|---|---|---|---|---|---|
| Van Alstyne | 87.39 | 52.00 | 35.39 | | |
| Goodenough-Harris | 110.84 | 70.69 | 40.15 | | |
| Composite Criterion Score | 99.37 | 61.50 | 37.87 | | |
| Index of Status Characteristics | 61.42 | 69.12 | -7.70 | | 0.00067 |
| Achievement Press | 365.39 | 240.69 | 124.70 | 0.00028 | 0.00033 |
| Language Models | 370.71 | 254.21 | 116.50 | 0.00005 | 0.00006 |
| Academic Guidance | 340.97 | 215.98 | 124.80 | 0.00009 | 0.00011 |
| Activeness of Family | 271.78 | 183.74 | 88.05 | 0.00003 | 0.00003 |
| Intellectuality in the Home | 298.18 | 201.88 | 96.30 | -0.00001 | -0.00002 |
| Work Habits in Family | 277.63 | 207.74 | 69.89 | -0.00012 | -0.00013 |
| Identification with Models | 187.50 | 129.17 | 58.33 | -0.00001 | -0.00001 |
| Range of Social Interaction | 309.26 | 233.33 | 75.88 | -0.00010 | -0.00010 |

Table V--Continued

| Variable (1) | HP Mean (2) | LP Mean (3) | D (4) | First Function (5) | Second Function (6) |
|---|---|---|---|---|---|
| Perception of Value of Education | 355.26 | 244.64 | 110.62 | 0.00006 | 0.00005 |
| | | | $T^2$ = | 67.8362 | 70.2976 |
| | | F (df 9, 70) = | | 6.7643 | |
| | | F (df 10, 69) = | | | 6.2186 |

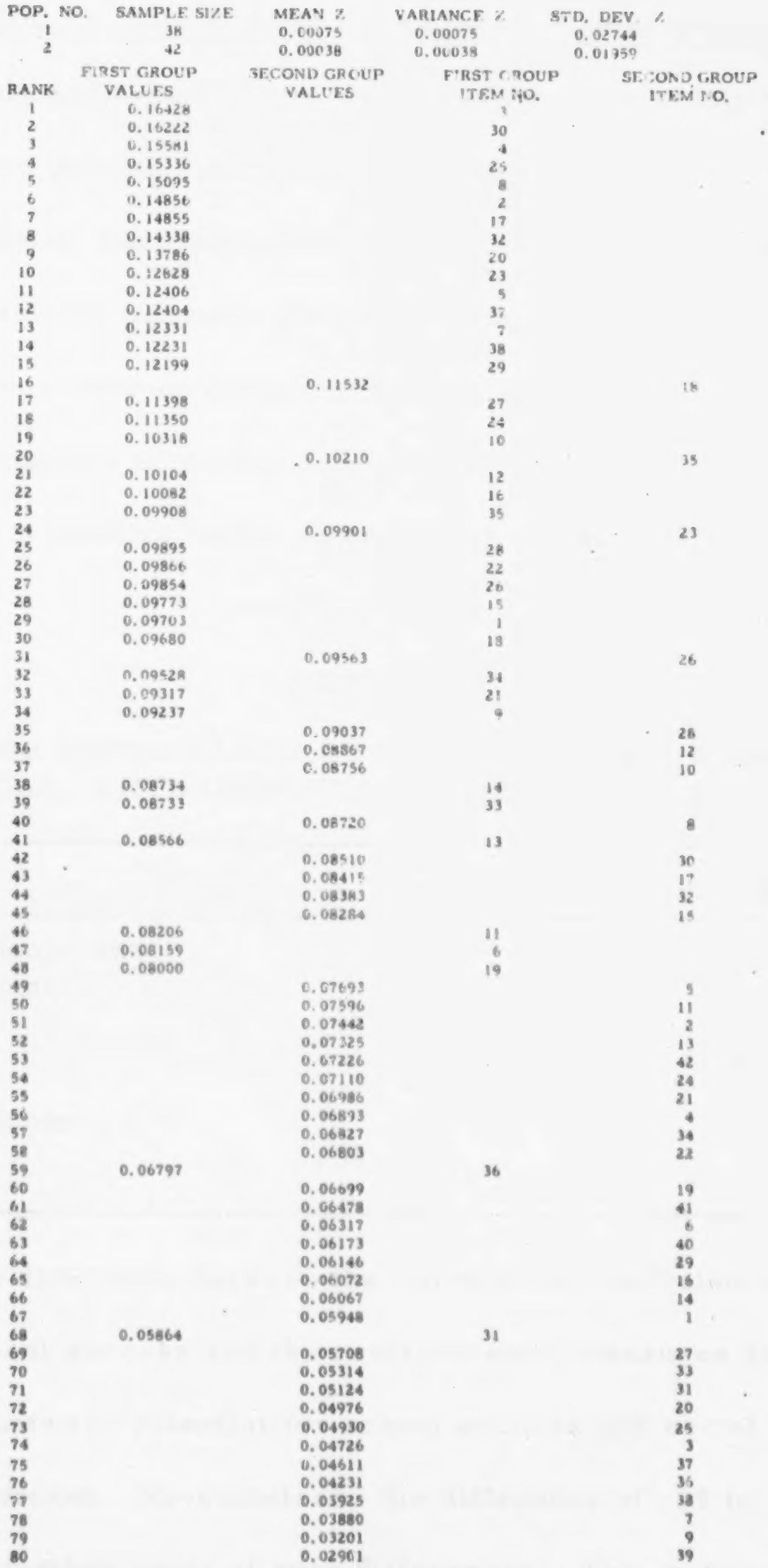
The difference between means is in the direction of the HP group, including the ISC which is an inverse measure assigning low numerical values to high status. The F ratio, which is computed from $T^2$, is significant beyond the .01 level $\left[F_{.01}(\text{df } 9, 70) = 2.67\right]$, and the hypothesis that the difference between the environmental backgrounds of the groups is zero is rejected.

Although the group difference was relatively large for each Environmental Process Variable, the discriminant function coefficients presented in Column 5 of Table V suggest that not all variables contributed equally to the discrimination between the groups. The discriminant function coefficients for Intellectuality in the Home, Work Habits of the Family, Identification with Models, and Range of Social Interaction, were negative. This may be due to overlap in the distributions of these measures (Hoel 1962, 179). In the case of the variable called Identification with Models, the restricted range of the ratings may also have entered into the negative contribution of this factor.

An inspection of columns five and six of Table V indicates that adding the Index of Status Characteristics to the test of differences does not appreciably change the weights of the discriminant function coefficients.

The discriminant function coefficient may be used to compute a value (z) which serves as an index for discriminating between the members of the two samples (Hoel 1962, 180). From the resulting index the sample elements may be ranked. Figure 1 presents the computer printout which provides a graphic representation of the separation between the sample groups, based on the best linear combination of the measures of environmental factors.

In Figure 1, "First Group Values" refer to subjects in the HP group (N = 38), and "Second Group Values" refer to subjects in the LP sample (N = 42). The top half of the rank order distribution is occupied by 32 of the 38 subjects in the HP group. Only eight of the 42 subjects in the LP group occupy positions in the top half of the rank distribution.



```
POP. NO.   SAMPLE SIZE     MEAN Z      VARIANCE Z      STD. DEV. Z
    1          38          0.00075      0.00075         0.02744
    2          42          0.00038      0.00038         0.01959
          FIRST GROUP    SECOND GROUP     FIRST GROUP      SECOND GROUP
RANK        VALUES          VALUES          ITEM NO.          ITEM NO.
   1        0.16428                            3
   2        0.16222                           30
   3        0.15581                            4
   4        0.15336                           25
   5        0.15095                            8
   6        0.14856                            2
   7        0.14855                           17
   8        0.14338                           32
   9        0.13786                           20
  10        0.12828                           23
  11        0.12406                            5
  12        0.12404                           37
  13        0.12331                            7
  14        0.12231                           38
  15        0.12199                           29
  16                       0.11532                             18
  17        0.11398                           27
  18        0.11350                           24
  19        0.10318                           10
  20                       0.10210                             35
  21        0.10104                           12
  22        0.10082                           16
  23        0.09908                           35
  24                       0.09901                             23
  25        0.09895                           28
  26        0.09866                           22
  27        0.09854                           26
  28        0.09773                           15
  29        0.09703                            1
  30        0.09680                           18
  31                       0.09563                             26
  32        0.09528                           34
  33        0.09317                           21
  34        0.09237                            9
  35                       0.09037                             28
  36                       0.08867                             12
  37                       0.08756                             10
  38        0.08734                           14
  39        0.08733                           33
  40                       0.08720                              8
  41        0.08566                           13
  42                       0.08510                             30
  43                       0.08415                             17
  44                       0.08383                             32
  45                       0.08284                             15
  46        0.08206                           11
  47        0.08159                            6
  48        0.08000                           19
  49                       0.07693                              5
  50                       0.07596                             11
  51                       0.07442                              2
  52                       0.07325                             13
  53                       0.67226                             42
  54                       0.07110                             24
  55                       0.06986                             21
  56                       0.06893                              4
  57                       0.06827                             34
  58                       0.06803                             22
  59        0.06797                           36
  60                       0.06699                             19
  61                       0.06478                             41
  62                       0.06317                              6
  63                       0.06173                             40
  64                       0.06146                             29
  65                       0.06072                             16
  66                       0.06067                             14
  67                       0.05948                              1
  68        0.05864                           31
  69                       0.05708                             27
  70                       0.05314                             33
  71                       0.05124                             31
  72                       0.04976                             20
  73                       0.04930                             25
  74                       0.04726                              3
  75                       0.04611                             37
  76                       0.04231                             36
  77                       0.03925                             38
  78                       0.03880                              7
  79                       0.03201                              9
  80                       0.02901                             39
```

Figure 1

COMPUTER PRINTOUT SHOWING SUBJECT RANKS BASED ON
BEST LINEAR COMBINATION OF MEASURES

School Potential, Social Class, and Environmental Relationships

A second hypothesis of this investigation stated that the relationship between potential for school success and environmental measures would be higher than the relationship between school potential and social status. Table VI presents the correlation coefficients and the test of the difference between them. In this table the correlation coefficient for the Composite Criterion Score and ISC has been changed from a negative to a positive value, to adjust for the inverse nature of the ISC measure.

TABLE VI

TEST FOR SIGNIFICANCE OF DIFFERENCE BETWEEN SCHOOL POTENTIAL, ENVIRONMENTAL AND SOCIAL CLASS MEASURES

| Measures | r | z | D | $SE_D$ | CR | Level of Significance |
|---|---|---|---|---|---|---|
| Criterion Score and Environmental Rating | .59 | .68 | .29 | .233 | 1.245 | n. s. |
| Criterion Score and ISC | .37 | .39 | | | | |

The difference between the correlation coefficients for (1) potential for school success and the environmental measures and (2) the relationship between potential for school success and social class status is not significant. Nevertheless, the difference of .29 is large enough to warrant further study of such differences. The environmental range for our population was relatively small compared to the population of the total community. This limited range of variation could depress the size of the correlations.

Table VII presents the correlation coefficients obtained between selected pairs of measures. Correlations involving the Index of Status Characteristics have been changed from negative to positive values.

TABLE VII

CORRELATIONS BETWEEN SELECTED MEASURES

| First Measure | Second Measure | Correlation Coefficient |
|---|---|---|
| Van Alstyne | Composite Environmental Rating | .67 |
| Index of Status Characteristics | Composite Environmental Rating | .63 |
| Goodenough-Harris | Composite Environmental Rating | .43 |
| Van Alstyne | Index of Status Characteristics | .40 |
| Goodenough-Harris | Index of Status Characteristics | .28 |

The highest correlations of those presented in Table VII are between the English Vocabulary test and the rating of the environments, and between the environmental rating and the measure of social class standing. The Goodenough-Harris scores were not highly related to either the environmental measures, or to the Index of Status Characteristics. This may suggest that the abilities measured in the Goodenough-

Harris drawing test are less influenced by factors relating to social class and to home environment than are verbal tests. The relationship between ISC, a conventional measure of social class status, and the ratings of the environments would seem to indicate that some, but certainly not all, factors measured in the environments are related to social class.

## Summary

The difference between the environmental backgrounds of HP and LP subjects is significant at the .01 level. Four of the Environmental Process Variables were weighted negatively in the discriminant analysis, and should be subjected to further study to determine the cause.

There was no significant difference between the correlation coefficients for the relationships between social class and potential for school success, and between potential for school success and a measure of environmental background. The null hypothesis could not be rejected. Because of the restricted range of variation in the environments of our subjects, this relationship should be explored further for practical reasons, especially in the light of contrary findings by Dave (1963) and Wolf (1963).

Correlations between environmental ratings and social class were fairly high, indicating that many environmental deficiencies may be commonly associated with social class, while some home environments may be atypical of those which are characteristic of other families of comparable social class.

The Goodenough-Harris Drawing Test was not highly related either to the index of social status, or to the measures of environmental background. The test may be relatively free of learning influences in the environment, as compared to verbal tests.

# CHAPTER V

# DESCRIPTIVE ANALYSIS OF THE ENVIRONMENTS

A statistical analysis of the ratings of the home environments was presented in the preceding chapter. The purpose of this chapter is to describe selected aspects of the environments within traditional descriptive categories for social groups. The study was not designed specifically to produce an ethnographic description of Mexican-Americans in Tucson but it was possible to extract some cultural evidence from the interview protocols. By examining these data in widely used categories, such as family structure and occupational status, two objectives were sought. First, within the context of this treatment the two sample groups of Mexican-American families could be compared for likenesses and differences in behavioral patterns. Secondly, it should be possible to make inferences concerning the strengths or weaknesses of the environments in terms of their potential for providing facilitating experiences for the intellectual development of children.

## Residential Patterns

1. Geographic Distribution. Figure 2 presents a map of the south and west portions of Tucson, Arizona. All fourteen schools

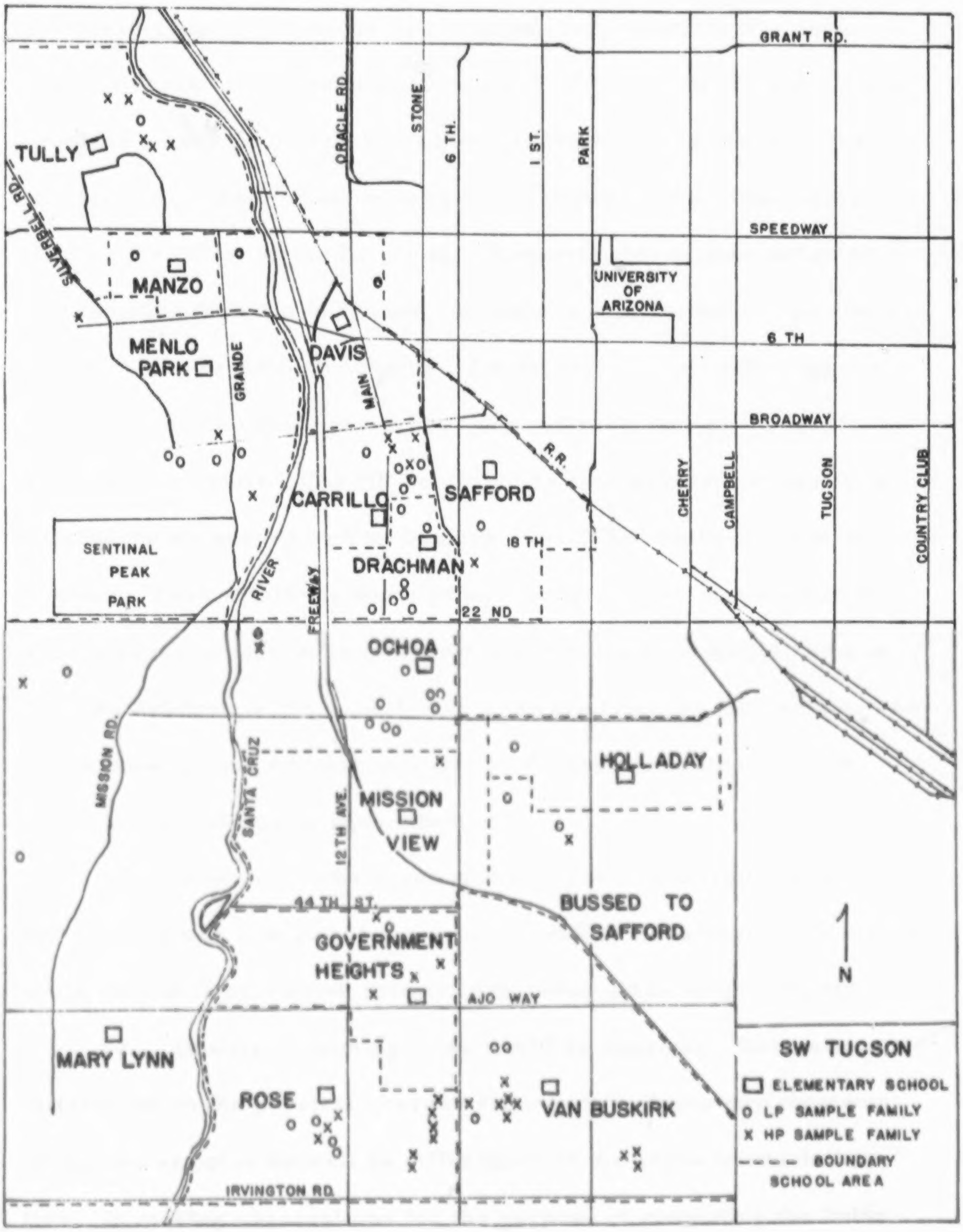

GRANT RD.
ORACLE RD.
STONE
6 TH.
1 ST.
PARK
TULLY
SILVERBELL RD.
SPEEDWAY
MANZO
UNIVERSITY OF ARIZONA
6 TH
MENLO PARK
GRANDE
DAVIS
MAIN
BROADWAY
R.R.
CHERRY
CAMPBELL
TUCSON
COUNTRY CLUB
CARRILLO
SAFFORD
18 TH
SENTINAL PEAK PARK
RIVER
FREEWAY
DRACHMAN
22 ND
OCHOA
MISSION RD.
SANTA CRUZ
HOLLADAY
12 TH AVE.
MISSION VIEW
BUSSED TO SAFFORD
44 TH ST.
GOVERNMENT HEIGHTS
AJO WAY
N
MARY LYNN
ROSE
VAN BUSKIRK
IRVINGTON RD.
SW TUCSON
□ ELEMENTARY SCHOOL
O LP SAMPLE FAMILY
X HP SAMPLE FAMILY
BOUNDARY SCHOOL AREA

Figure 2
Map of Southwest Tucson

attended by children composing our population lie within this area. The residence of each family interviewed is located on the map. This provides a graphic illustration of the geographic distribution of the families of children whose scores on the criterion measures placed them in the HP or in the LP group. Inspection of the map indicated that families included in the two contrasting samples tend to be concentrated in different neighborhoods. LP subjects come predominantly from the neighborhoods served by Ochoa, Drachman, and Carrillo elementary schools. The HP subjects are concentrated primarily in neighborhoods served by Van Buskirk, Rose, and Tully elementary schools. Even within the same school feeder areas, elements of the same sample appear to be clustered together. For example, nine of thirteen children in the Rose School area are from the HP sample, and the remaining four who are included in the opposite sample live in very close proximity to each other.

In general, the areas of the city in which families of the HP children are concentrated are lower middle class residential areas, while the LP families live primarily in lower class neighborhoods.

2. Quality of housing. As would be expected, there are differences in the physical characteristics of the home environments of the two samples as well as differences in the areas in which they live. In making observations for the purpose of computing the Index

of Status Characteristics for each family interviewed, dwellings were rated on the basis of criteria set forth by Warner ( 1949, 149-150 ). Of the LP families in the study, 73.81 per cent lived in dwellings which were classified as poor or very poor. In general, HP families had somewhat better living accommodations. Even so, 26.31 per cent lived in poor or very poor houses. Of the LP group, 19.05 per cent lived in dwellings rated as fair or average, while 50.00 per cent of the HP families lived in dwellings of this class. Houses classified as good were the homes of 7.14 per cent of the LP families and 23.68 per cent of the HP families.

The houses in the poor or very poor categories were usually badly in need of repair and usually were severely over-crowded. By middle class standards even the fair and average and some of the good houses would be considered over-crowded. Beds, day beds or roll-away beds in the living rooms of some houses bore witness to the crowded conditions and, during the interviews homes were often filled with children who were interested in the proceedings.

The better houses usually had some grassed area and trees or bushes but houses in the poor or very poor category frequently had no yard, or, at best, very little. Children's play equipment was seldom in evidence about the poorer homes.

3. Stability of Residence Pattern. Although a large proportion of the dwellings would be considered inadequate for the number of persons housed in them, several families had lived in these same dwellings for many years. Complete records of the residence histories of our eighty families were not collected, but enough information was available to provide a crude index of the stability of the residence patterns of the two groups being compared in this study. Since HP families seemed, in general, to be in a financially more favorable position than families of the LP children, it seemed probable that residence patterns of the HP group might be more stable than those of the LP group. The Mann-Whitney U Test was used to examine the hypothesis that there is no difference in the residence patterns of the two groups ( $h_1$ ) against the alternate hypothesis that HP families have lived longer in their present dwellings ( $h_2$ ), suggesting greater residential stability. Table VIII compares the number of families in each group residing in their present dwellings for given periods of time. These data have been grouped for convenience in presentation although the statistical test utilized the data in their raw form.

## TABLE VIII

## LENGTH OF RESIDENCE OF HP AND LP FAMILIES IN THEIR PRESENT DWELLING

| Years of Residence | HP Families (N = 38) | LP Families (N = 41) | Total (N = 79) |
|---|---|---|---|
| 20+ | 4 | 0 | 4 |
| 15-19 | 2 | 2 | 4 |
| 10-15 | 4 | 5 | 9 |
| 5-9 | 12 | 6 | 18 |
| 4 | 3 | 1 | 4 |
| 3 | 3 | 3 | 6 |
| 2 | 4 | 4 | 8 |
| 1 | 2 | 5 | 7 |
| 0 | 4 | 15 | 19 |
| Total | 38 | 41 | 79 |

Residence data for one family in the LP group was missing. In tabulating figures for the length of residence, any period under one year was counted as zero. Other figures were rounded back to indicate the number of completed years the family had lived in its present home. The obtained z of -3.25 was significant at the .001 level. The hypothesis that HP families display greater residential stability could not be rejected.

4. National Origin of the Children and Their Parents. Teachers often assume that a contributory factor in their lack of success in teaching Mexican-Americans is the continual influx of families from Mexico. It is commonly believed that acculturation to middle class patterns of behavior and performance is directly related to length of residence in the United States. If this were true we should find children in families which have recently immigrated from Mexico more frequently represented in our LP group. The data are presented in Table IX. In this and all subsequent contingency tables having an observed frequency smaller than five in any cell, chi-square has been corrected for continuity.

TABLE IX

NATIONAL ORIGIN

| Variable | Groups HP $f_o$ | HP $f_e$ | LP $f_o$ | LP $f_e$ | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
| Place of Birth of child | | | | | | |
| Mexico | 1 | 2.85 | 5 | 6.25 | 1.317 | n.s. |
| Not Mexico | 37 | 35.15 | 37 | 38.15 | | |
| Place of Birth of parents | | | | | | |
| Mexico | 19 | 17.16 | 16 | 17.84 | .504 | n.s |
| Not Mexico | 56 | 57.84 | 62 | 60.16 | | |

The group differences on the National Origin of children and their parents are not significant. This result casts some doubt on the assumption that recency of arrival in this country is a primary factor affecting potential for success in school.

Family Structure

Table X presents data concerning selected aspects of family structure for our groups.

TABLE X

FAMILY STRUCTURE

| Variable | Groups | | | | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
| | HP | | LP | | | |
| | $f_o$ | $f_e$ | $f_o$ | $f_e$ | | |
| Extended Family | | | | | | |
| Others in household | 11 | 11.4 | 13 | 12.6 | .038 | n. s. |
| No others in household | 27 | 26.6 | 29 | 29.4 | | |
| Marital Stability | | | | | | |
| Mother divorced or previously married | 18 | 17.83 | 21 | 21.17 | .007 | n. s |
| Mother never divorced | 14 | 14.17 | 17 | 16.83 | | |
| Father Present in household | | | | | | |
| Father present | 35 | 32.77 | 34 | 36.22 | 2.092 | n. s |
| Father absent | 3 | 5.22 | 8 | 13.75 | | |

1. Extended Families. The difference between the numbers of households containing extensions to the nuclear family is not significant for our groups. Thirty per cent of the families interviewed in this investigation had other relatives living in the house. This result is consistent with the finding of Officer, who conducted a recent survey of the Mexican-American colony in Tucson. He found evidence that the extended family is still important in this community. Some of his households were extended vertically or laterally, but more commonly, "Most of the nuclear families of the colony were widely related throughout the community, and thus belonged to what could be termed 'extended' families" (1964, 93). Evidence of the continued existence of extended families in this latter sense will be presented when we discuss the travel patterns of our subject families.

2. Marital Stability. The chi-square test was used to determine whether divorce and previous marriage are equally common among mothers of both groups. Table IX shows the number of HP and LP mothers who have been previously married, or who are presently divorced.

The difference between the HP and LP groups here is not significant. For the total group, the number who have been divorced or previously married is over 55 per cent. This indicates that divorce is probably more common among both groups than among the population of the country at large. This is in line with Officer's observation that "In spite of its overwhelming Catholicism, the Mexican community had a fairly high divorce rate" ( 1964, 127 ).

3. Presence of Fathers or Father Substitute. Considering the high rate of divorce among the mothers who were interviewed it is logical to ask if fathers or father figures are missing from more homes in one group than in the other. Recalling Deutsch and Brown's ( 1964, 29-31 ) finding that children whose fathers were missing from the home tested lower than children of comparable social status whose fathers were present in the home, it seemed possible that a similar situation might exist for the families in our study. Data in Table IX were used to test the hypothesis that the absence of a father figure is not related to placement of children in our HP or LP groups.

The obtained chi-square is not large enough for the group differences to be considered significant. In both groups, the incidence of father absenteeism is very low. In a few instances the father figure was a grandfather, but nearly all women who had been divorced were remarried at the time of the interviews. In some cases the unions may have been common law, but our data are not sufficiently detailed to distinguish these unions from others.

4. Number of Children in the Families. Are there differences in the number of children in the families of our two sample groups?

Officer found that for the 20 households included in his survey, the modal number of children in the households of the subjects' parents was seven. The modal number of children in the families of procreation of these same subjects was four (1964, 103). This may indicate that family size is decreasing among the lower middle class Mexican-Americans who constituted the bulk of his sample.

The hypothesis that there is no difference in the number of children in the HP and LP families was tested against the alternate hypothesis that LP families have more children than HP families. This hypothesis was tested with the Mann-Whitney U Test. This procedure yielded a z of -2.46, which is significant at the .01 level. This would indicate that LP families do have more children than HP families. The average number of children in the HP homes was 4.37, compared to an average of 6.02 children in LP families.

## Educational Status of Parents

1. Comparison of Educational Attainment of Mothers and Fathers. The Mann-Whitney U Test was used to examine the data relating to the education of parents of the children in the HP and LP samples. When families have economic difficulties, boys who are of school age may have to terminate their education early in order to contribute to the support of the family. In accordance with this reasoning the null hypothesis was tested against the alternate hypothesis that

the mothers in our sample families have attained more formal education than the fathers. The obtained z of - .597 is not significant.

2. Comparison of Educational Level of HP and LP Fathers. Comparing the level of education attained by HP and LP fathers, the hypothesis that there is no difference in the educational level of the fathers was tested against the alternative hypothesis that the fathers of children in the HP group have completed more years of schooling than the fathers of LP children.

The z obtained for this comparison is 1.437. The difference between the educational levels of the two groups of fathers is not significant and the null hypothesis could not be rejected.

3. Comparison of Educational Attainment of HP and LP Mothers. The third comparison of educational level was computed for the mothers of the two groups of children. The z for this comparison is 2.302, which indicates that the difference in the educational level of the mothers is significant at the .05 level, closely approaching the .01 level. The null hypothesis must be rejected in favor of the hypothesis that mothers of HP children have a higher level of educational attainment than mothers of LP children.

## Occupational Status of Parents

The chi-square test was used to answer several questions pertaining to the occupational status of parents in the HP and LP groups. The data are presented in Table XI.

### TABLE XI

### OCCUPATIONAL STATUS OF PARENTS

| Variable | Groups | | | | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
| | HP | | LP | | | |
| | $f_o$ | $f_e$ | $f_o$ | $f_e$ | | |
| Stability of Employment for Fathers | | | | | | |
| Employed full time | 31 | 25.5 | 20 | 25.5 | 7.843 | .01 |
| Not employed full time | 3 | 8.5 | 14 | 8.5 | | |
| Occupational Level of Principal Wage Earners | | | | | | |
| Low Status | 27 | 30.43 | 33 | 29.57 | 4.40 | .05 |
| Higher Status | 8 | 4.57 | 1 | 4.43 | | |
| Employment of Parents | | | | | | |
| Both Parents Work | 4 | 4.31 | 5 | 4.69 | .242 | n. s. |
| Both Parents Don't Work | 30 | 29.69 | 32 | 32.31 | | |
| Families Solely Dependent Upon Mother's Income | | | | | | |
| Yes | 2 | 1.42 | 1 | 1.54 | .257 | n. s. |
| No | 36 | 36.57 | 41 | 39.46 | | |

1. Employment of Fathers. The data in Table XI show that more HP fathers than LP fathers were employed full time, and the difference is significant at the .01 level.

2. Occupational Level of Major Wage Earners. Are the major wage earners of the HP families employed in higher status occupations than heads of LP families? Table XI presents the data related to this question. The "higher status" category includes occupations such as clerical and sales personnel, supervisors of unskilled or semi-skilled workers, and small businessmen. Examples of occupations placed in the low status category include unskilled construction laborers, janitors or yardmen, and semi-skilled trades associated with the construction industries.

The chi-square here (4.403) indicates that the difference between groups is significant at the .05 level. Among the major wage earners of both the HP and the LP families, low status jobs were much more common than jobs requiring specialized skills. Major wage earners of 27 of the HP families and 33 of the heads of LP families were so employed. This tabulation does not include families which were on welfare, or who had no visible means of support. Had they been included the differences noted would have been even more pronounced.

3. Occupational Status of Mothers. Are mothers of HP children more frequently employed outside the home than mothers of LP children? Table XI presents the data related to this question. The number of families in which both parents are usually employed is compared with the number of families in which both parents are not gainfully employed. The difference between the groups is not significant as indicated by the small chi-square.

Table XI also compares the number of HP and LP families which were entirely dependent upon the mother's income for support. The difference between the groups is not significant. Only 3.75 per cent of the families of the combined groups are solely dependent upon the mother's income. This fact, in combination with the data indicating that few mothers work outside the home, suggests that Mexican-Americans in Tucson may differ in this respect from some other minority groups in the United States. In some educationally disadvantaged minority groups a woman is more likely to be able to find outside employment than is her husband. During the interviews many of the mothers replied with strong emphasis that they did not work outside the home. The feeling seemed to be stronger than Officer indicates was the case with his subjects (1964, 94). While the traditional emphasis on the place of the woman at home may furnish a partial explanation for the small number of mothers who are employed outside the home, Officer's observation ( 1964, 94 ) that lack of training places an additional restriction on outside work is clearly a factor in the present study as well. A number of the subjects said that they were envious of the interviewers, some of whom had children of their own at home, because they had the training and opportunity to get outside the home and do interesting work.

### Linkages and Interpersonal Relationships in the Community

Data concerning interpersonal relationships and linkages with the community are presented in Table XII. These data deal specifically with friendship and kin association patterns, with contacts resulting from membership in sodalities, and with the use of periodical publications.

1. Interpersonal Relationships with Friends and Kin. Data concerning persons with whom the subjects most frequently associate was examined to determine the residence areas of the friends and associates of our subjects. The analysis is necessarily crude but when subjects told the interviewers where their friends lived, it was usually possible to determine if the neighborhood was prodominantly Mexican-American or predominantly Anglo-American. Responses were tallied and the number of responses indicating association with friends in predominantly Anglo neighborhoods was compared with the numbers that seemed to be confined to the subject's own neighborhood, or to

## TABLE XII

## LINKAGES AND INTERPERSONAL RELATIONSHIPS

| Variable | Groups | | | | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
| | HP | | LP | | | |
| | $f_o$ | $f_e$ | $f_o$ | $f_e$ | | |
| Residence Areas of Friends | | | | | | |
| Predominantly Mexican Neighborhoods | 15 | 16.47 | 24 | 22.53 | 1.72 | n. s. |
| Predominantly Anglo Neigborhoods | 4 | 2.53 | 2 | 3.47 | | |
| Visiting Preferences | | | | | | |
| Visit relatives | 15 | 16.70 | 20 | 18.30 | .812 | n. s. |
| Visit others | 6 | 4.30 | 3 | 4.70 | | |
| Friendly Associations | | | | | | |
| Few friends | 14 | 15.20 | 16 | 14.80 | .320 | n. s. |
| Have friends | 24 | 22.80 | 21 | 22.20 | | |
| Sodality Memberships | | | | | | |
| Sodalities | 17 | 12.82 | 10 | 14.17 | 3.908 | .05 |
| No sodalities | 21 | 25.17 | 32 | 27.82 | | |
| Periodicals Available in the Home | | | | | | |
| One or more periodicals | 28 | 20.87 | 16 | 23.13 | 10.625 | .01 |
| No periodicals | 9 | 16.13 | 25 | 17.87 | | |

other Mexican-American neighborhoods. The data presented in Table XII show that the group difference on this variable was not significant.

The percentage (13.3) of persons from either group claiming to associate with friends who reside in predominantly Anglo neighborhoods is very small. The friendship associations of both groups appear to be fairly restricted to neighborhoods inhabited predominantly by members of their own ethnic background.

After telling the interviewer where their best friends lived, the subjects were asked to tell what other people they enjoyed being with. Table XII presents data dichotomized as enjoying kin as one category, and enjoying others as the second category. The number and per cent of mothers from each group who stated that they prefer being with relatives is compared against those who named non-relatives. The chi-square of .812 indicates that the difference between the groups is not significant.

The number in both groups indicating enjoyment in visiting non-relatives is very small. Families in both of these groups appear to prefer visiting with relatives over visiting with others. The interviewers reported that even godparents were frequently selected from among biological kin.

When asked about their interrelationships with friends, many subjects stated that they had no friends or very few friends. Our data are presented in Table XII. The difference between the groups is not significant on this comparison. In both groups the frequency of subjects indicating that they have few friends, or ". . . don't mix much with people. . ." is high. Of the 75 subjects who responded to this question, 40 per cent indicated that they did not have friends, and many visited with no more than one or two relatives or close neighbors.

2. Systemic Linkages Through Participation in Sodalities. Membership in sodalities offers one possible way in which members of the Mexican-American ethnic population in Tucson would be able to establish systemic linkages with social institutions of the dominant society. A question of interest is then, do the members of LP families join and participate in fewer sodalities than members of HP families? Sodality membership might constitute one avenue of contact with the values and expectations of the Anglo community. The subjects interviewed in this study were compared to determine whether or not a pattern of sodality membership is more prevalent in the HP than in the LP families.

The data in Table XII indicate that the difference between sodality memberships for the HP and LP families is significant at the .05 level, with members of HP households more frequently belonging to sodalities. However, the nature of the types of sodalities which are represented by the numerals in Table XII is such that we should be careful not to over estimate the extent of interpersonal relationships between members of HP households and members of the dominant culture. The membership of most of the sodalities with which affiliation is claimed consists primarily of other Mexican-Americans. The schools attended by the children in our samples, for the most part, serve areas that are predominantly Mexican-American in ethnic composition. This probably restricted the range of interpersonal relationships within organizations such as the PTA and other school-based groups. Boy Scout troops, likewise, are relatively neighborhood based for the majority of their activities. The same is generally true for activities of church-affiliated organizations such as the CYO, the Alter Society, and the Santa Cruz Club.

Some exceptions to this general pattern of restricted range of interaction were evident in the HP families. Examples of sodality affiliations that would tend to bring family members into wider interrelationships within the community would include an investment club, a Jewish sponsored Junior Theater workshop, and might be stretched to include activities such as serving as a captain for the Cancer Drive. However, even for the HP group, such affiliations were few in number. Sodalities in which membership and participation was claimed by LP families were generally restricted to Mexican-American as, for example, the Latin-American Club.

3. Use of Publications. If it may be assumed that the use of periodical literature brings readers into closer contact with what is going on in the world outside the colony, it seemed important to see whether HP families had regular access to more periodicals than did LP families. A count was made of the number of periodicals which interviewees said they either subscribed to or purchased regularly. The maximum number of periodicals named by any respondent was four, while many families had no reading material other than an occasional comic book or school book.

Table XII compares the number of families in each group who receive at least one periodical on a regular basis. The tabulation included both magazines and newspapers. The single exception was the Tucson American, a conservative newspaper which is distributed without charge to residents of the Tucson area.

On this comparison the difference between the groups was significant at the .01 level, and approached significance at the .001 level. The difference was in the expected direction. Only nine families in the HP group were without any regular publication, while 25 families in the LP group claimed access to no periodicals.

## Customary Travel and Diversion

The interview protocols provided information concerning week-end activities, travel, and the favorite diversions or pasttimes of the families. These data have been classified along a number of dimensions and are presented in Table XIII to provide comparisons of the kinds of experiences available to HP and LP children.

1. Weekend Activities. In order to determine whether or not the families in one group travel to nearby Mexican towns on weekends more frequently than families in the other group, the weekend travel destinations mentioned were tabulated. Some families stated that trips were never taken on weekends, while a few families named two or more places. Table XIII presents a comparison of the number of responses of HP and LP families naming Mexican sites, versus all other responses. The difference between the groups was not significant for this comparison. Locations in Mexico are no more popular as objectives for weekend trips for LP than for HP families.

A second question concerning weekend activities was whether or not HP families engage in more weekend travel than LP families. Table XIII compares the numbers of HP and LP families who travel on weekends against those who could not name any site visited within the past six weeks. In this comparison N = families, rather than responses. The difference between the groups is significant at the .001 level.

During weekend outings, do HP families visit more places which are likely to extend the range of experiences of the children?

## TABLE XIII

## FAMILY TRAVEL AND DIVERSION

| Variable | Groups HP $f_o$ | HP $f_e$ | LP $f_o$ | LP $f_e$ | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
| Family Travel Destinations | | | | | | |
| Travel to Mexican sites | 7 | 6.25 | 6 | 6.75 | .206 | n. s. |
| Travel to U. S. Sites | 31 | 31.75 | 35 | 34.25 | | |
| Weekend Travel | | | | | | |
| Travel or outings | 34 | 25.01 | 18 | 26.99 | 16.236 | .001 |
| No travel or outings | 4 | 12.99 | 23 | 14.01 | | |
| Travel Having Educational Value | | | | | | |
| High Educational Potential | 18 | 13.73 | 3 | 7.23 | 5.014 | .05 |
| Other Travel | 16 | 20.27 | 15 | 10.73 | | |
| Travel Outside Local Area | | | | | | |
| Travel | 24 | 21.85 | 22 | 24.15 | .948 | n. s. |
| No travel | 14 | 16.15 | 20 | 17.85 | | |
| Travel to Visit Kin | | | | | | |
| Visit Kin | 15 | 17.29 | 18 | 15.71 | 1.808 | n. s. |
| Other reasons | 7 | 4.71 | 2 | 4.29 | | |
| Travel to Broaden Experiences | | | | | | |
| Gaining experiences | 14 | 9.95 | 5 | 9.05 | 4.851 | .05 |
| Other reasons | 8 | 12.05 | 15 | 10.95 | | |

Table XIII--Continued

| Variable | Groups |  |  |  | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
|  | HP |  | LP |  |  |  |
|  | $f_o$ | $f_e$ | $f_o$ | $f_e$ |  |  |
| Participation in Active and Passive Diversion |  |  |  |  |  |  |
| Active Diversion | 60 | 51.70 | 35 | 43.30 | 8.263 | .01 |
| Passive Diversion | 20 | 28.30 | 32 | 23.70 |  |  |
| Diversion at Home and Away from Home |  |  |  |  |  |  |
| Diversion at home | 23 | 33.89 | 29 | 28.11 | 2.934 | n. s. |
| Diversion away from home | 59 | 53.57 | 39 | 45.43 |  |  |

In order to answer this question the places visited by the families were classified according to their potential educational value for the children. Since every outing may have some such value, a judgment was made concerning the relative educational potential of the experience. In general, it is reasonable to assume that visiting kin may be repetitive of experiences which are already common to the child, while a visit to a local landmark, a historic site, recreation areas, a zoo or a museum may have greater potential for extending the experiences of a child. Table XIII presents a comparison of places visited by HP and LP families. The places are classified as having high educational potential compared with other sites. In this contingency table, N = the total number of sites named, rather than the number of families naming locations. The difference between the groups is significant at the .05 level. Only three of a total of 21 responses by LP families indicated travel that could be considered relatively high in potential for extending the base of experience for a child.

2. Comparative Range and Frequency of Trips. Turning from weekend activities to trips that might involve a longer period of time, all trips taken within the past two years were tabulated. Some respondents reported having taken no trips during the past two or more years. Some had visited other towns in Arizona and neighboring states and many had traveled to border towns or to other points in

Mexico. Table XIII compares the number of HP and LP families which reported travel to some point outside of the Tucson metropolitan area. The difference ( $\chi^2 = .948$ ) between travel out of Tucson undertaken by HP and LP families during the past two years is not significant.

If there is no difference in the amount of traveling done by families in the two groups, it is possible that they travel for different reasons. This possibility was approached by classifying stated reasons for travel in two different ways and comparing the groups for differences. First, in keeping with the strong family values which are evident throughout the protocols, many respondents gave the visiting of relatives as the primary reason for their travel. The reasons given by the respondents were dichotomized on the basis of ( 1 ) visiting kin and ( 2 ) other reasons. The numbers of HP and LP families reporting in these ways are presented in Table XIII. The chi-square ( 1.808 ) is small and the difference between the HP and LP families on this comparison is not significant. For both groups, travel for the purpose of visiting relatives is clearly important, with 78.57 per cent of all reported travel being undertaken primarily for this reason.

A second dichotomy tested for differences in stated reasons for going on trips was constructed on the basis of travel undertaken for recreational purposes, or specifically intended to broaden the experiences of family members, as one category. Travel for all other reasons constituted the second class. In classifying responses according to these categories, secondary as well as primary reasons for travel were taken into consideration. The numbers of HP and LP families reporting these purposes for their travel are presented in Table XIII.

On this comparison the difference between the HP and LP groups is significant at the .05 level, indicating that HP families more frequently expressed such motives for their travel. For most families who gave other reasons, visiting relatives was usually the only reason for the trips. On the other hand, some of the families giving reasons in the recreation and experience category also visited relatives during their travels, but in addition they went on guided tours, visited historic sites and monuments, watched parades, or went to see some specific sight which the parents thought would be of value for the children. In one family which had been to Merida and Ensenada, Mexico, Phoenix, Arizona, and Los Angeles and San Diego, California during the past two years, the mother stated that "We went so they [the children] could know about those places and learn everything possible about other things."

Another mother, whose family had recently visited Kino Bay, Mexico, informed the interviewer

> Last year, the Fourth of July, we took them [the children] to Kino Bay. They were about five and six, and would get so excited when they saw the water so big. They'd say, "Look, Mother, the river so big," and they would run and try to take in everything there was to see.

The interviewer asked why Kino Bay was chosen for the trip and was told,

> Well, because it was a holiday and I wanted them to run in the free air and have fun. They were really occupied 'cause they had a big can of shells, and all the way over we would stop and take their picture with the plants of the desert. Gilberto, he can distinguish very well between one thing and another.

Admittedly, not all subjects expressed the intentions for their outings so vividly as the mothers quoted above.

Aside from travel, do HP and LP families differ in the types of activities undertaken for diversion? In reading the protocols of the home interviews the investigator was impressed by the apparent high frequency with which subjects stated that they had no diversions. Many mothers said they and the family had little opportunity for recreation and diversion. For example, the interviewer asked Mrs. L___, mother of a child in the LP sample, "What do you like to do for recreation - for diversion?"

Mrs. L__'s answer was, "Well, since I've been married - I've been married seven years with my husband - I haven't gone out. I don't even know where the theater is now."

In answer to the same question, Mrs. M__. whose child is also in the LP group, responded, "Well, we stay right here at the house. We don't have the advantage of a good paycheck. We have to be shut in here - from the job to the house."

3. Preferred Activities for Diversion. In order to find what similarities or differences might exist in the activities undertaken by the two groups for diversion, the protocols were examined systematically and the activities which were named were listed and tallied. These activities were then classified into two dichotomies: (1) active and passive activities, and (2) activities confined to the home and activities taking place away from the home.

Table XIII presents a comparison of the number of responses in each category. Almost every subject named at least one activity for some member of the family, while some respondents gave multiple responses. All named activities are included in the figures presented, except for a few activities which did not clearly fall into one or the other half of a dichotomy. For example, it would be difficult to decide whether to classify as active or passive one subject's response that "My husband, what he like to do for diversion, is to drink a lot."

The difference ($\chi^2 = 8.263$) is significant at the .01 level. Almost 60 per cent of all activities named fell into the active category but, of these active diversions, almost 41 per cent were named by HP subjects. LP families accounted for only about 24 per cent of the active diversions. Activities such as playing a musical instrument, going for rides, dancing, and reading were classified as active. Examples of passive activities are TV viewing and attending movies.

Table XIII compares the numbers of activities which take place at home against those which are pursued away from home, for each group. The total number of activities named have been included in this tabulation. The difference between the groups is not significant. In this dichotomy activities such as gardening, woodworking, painting, and watching TV were placed in the home activity class. Dancing, family outings, and outdoor activities such as camping are examples of activities which are pursued away from the home.

### Values and Achievement Motive

1. Essentials of a Good Life. During the focused interviews, subjects were asked what they considered to be a good life. The ideas most frequently expressed involved statements that could be classified as relating to family life, to standards of behavior, or to desire for financial stability. Chi-square tests were used to determine whether or not the two groups of families in this study differ in their concepts of what comprises a good life. The data are presented in Table XIV.

## TABLE XIV

## FACTORS VALUED AS NECESSARY FOR A GOOD LIFE

| Variable | Groups HP $f_o$ | $f_e$ | LP $f_o$ | $f_e$ | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
| Family Values Essential | | | | | | |
| Family values | 18 | 16.85 | 10 | 11.15 | .269 | n.s. |
| Other values | 44 | 45.15 | 31 | 72.82 | | |
| Financial Stability Essential | | | | | | |
| Value financial stability | 28 | 25.88 | 15 | 17.12 | .746 | n.s. |
| Other values | 34 | 36.12 | 26 | 23.88 | | |
| Good Behavior Essential | | | | | | |
| Value good behavior | 3 | 5.42 | 6 | 3.58 | 1.868 | n.s. |
| Other values | 59 | 56.58 | 35 | 37.42 | | |

The first category in Table XIV compares the number of responses from each group expressing the view that a good life centers around family harmony as compared to other responses. Chi-square (.269) for this comparison indicates that the difference between the groups is not significant. On the basis of these data we conclude that there is no difference in the frequency with which HP and LP mothers express family values as essential components of a good life. Expressions included in the family values category were statements such as ". . . a united home," ". . . to be happy in your home with your family," and ". . . good family life."

Table XIV also presents the number of HP and LP mothers who verbalized the importance of financial stability as an essential component of a good life. Examples of statements placed in this category include ". . . to be out of debt and have some money saved in case it's needed," ". . . steady employment - to live comfortable," ". . . for my husband to have a better job," and "to eat good, relax good, and have everything one needs."

The difference between the number of HP and LP subjects who see financial stability as a requisite to a good life is not significant.

Some subjects stressed good behavior as an essential component of a good life. Perhaps it is artificial to separate these responses from those which emphasize family values, but the fact that makes these responses of special interest is that behavior which the mothers valued on the one hand, or condemned as detrimental to a good family life on the other, is frequently the type of behavior usually characterized as machaoism, that is, behavior to ". . . prove one's masculinity" (Officer 1964, 189). For example, one respondent thought that a good life should be peaceful and quiet, with the husband staying at home, while another woman thought that life would be better if ". . . men would not get so excited about the women." Such remarks were common in the protocols but did not necessarily appear in response to the question which was the basis for the following tabulation. By contrast, many women expressed pride in the fact that their own husbands did not behave in ways that are characteristic of machaoism.

Table XIV compares the number of HP and LP mothers who expressed the need for good behavior when asked what they thought a good life would be like. The small chi-square (1.868) indicates that the difference between HP and LP responses that value good behavior as necessary for a good life is not significant.

2. Factors Related to Achievement Motive. Several factors which would be expected to have an effect on achievement motive were examined for group differences. The data for these comparisons are presented in Table XV.

Do HP mothers express greater pride in the accomplishments of their husbands than mothers of LP children? Item 35 of the Interview Schedule (Appendix A) asks, "What has your husband done that has made you particularly proud of him?" In addition to providing information that could be used in rating the home environments, it was anticipated that this question would elicit information of two types. If it were found that women in our samples find little to be proud of in the activities of their husbands, this fact could be suggestive of factors

## TABLE XV

## FACTORS AFFECTING ACHIEVEMENT MOTIVE

| Variable | Groups | | | | Chi-Square | Level of Significance |
|---|---|---|---|---|---|---|
| | HP | | LP | | | |
| | $f_o$ | $f_e$ | $f_o$ | $f_e$ | | |
| Pride in Husband | | | | | | |
| Proud | 33 | 31.17 | 27 | 28.83 | 1.014 | n. s. |
| Not proud | 7 | 8.83 | 10 | 22.08 | | |
| Discrimination Against Mexican-Americans | | | | | | |
| Report discrimination | 15 | 14.64 | 10 | 10.36 | .005 | n. s. |
| Report no discrimination | 26 | 26.36 | 19 | 18.64 | | |
| Desire for change | | | | | | |
| Would not change | 13 | 12.87 | 12 | 12.13 | .004 | n. s. |
| Would change | 32 | 22.13 | 21 | 30.88 | | |
| Time Orientation Regarding Money | | | | | | |
| Future oriented | 29 | 21.92 | 19 | 26.08 | 6.764 | .01 |
| Immediate consumption | 29 | 36.08 | 50 | 42.92 | | |
| Educational Uses for Money | | | | | | |
| Educational uses | 14 | 11.87 | 12 | 14.13 | .881 | n. s. |
| Other uses | 44 | 46.13 | 57 | 54.87 | | |
| Mother's Aspiration for Child's Occupation | | | | | | |
| Unskilled work undesirable | 24 | 20.17 | 17 | 20.83 | 4.089 | .05 |
| All honest work acceptable | 7 | 10.83 | 15 | 11.17 | | |

Table XV--Continued

| | Groups | | | | | |
|---|---|---|---|---|---|---|
| Variable | HP | | LP | | Chi-Square | Level of Significance |
| | $f_o$ | $f_e$ | $f_o$ | $f_e$ | | |
| Aspirations and Expectations for Education of Children | | | | | | |
| Aspirations and Expectations Equal | 17 | 23.68 | 33 | 26.32 | 10.477 | .01 |
| Aspirations and Expectations Unequal | 19 | 12.32 | 7 | 13.68 | | |
| Educational Needs of Boys and Girls | | | | | | |
| Boys need more | 11 | 11.33 | 10 | 9.67 | .029 | .05 |
| Equal need | 23 | 22.67 | 19 | 19.33 | | |
| Mother's Estimate of Child's Ability | | | | | | |
| Child able | 32 | 27.28 | 21 | 25.72 | 6.099 | .02 |
| Child fair or slow | 3 | 7.72 | 12 | 7.28 | | |

influencing the motivational systems of the fathers. It would also reflect possible limitations in the role of fathers as behavioral models for their children.

One striking feature of the protocol materials relating to this question of pride in the accomplishments of husbands was the emphatic quality which characterized many of the negative responses to this question. Some stated firmly that their husbands had given them no cause to be proud. In response to this question, one of the mothers answered, "Oh, that's a funny one." The interviewer attempted to elicit more information by responding, "I'm sorry, I don't understand your answer." The mother simply countered, "Well, it is very funny."

In addition to a group of responses which were definitely negative, a few women answered that they did not know, or could not remember, what their husbands had ever done in which they could take pride. For purposes of classification, these responses were pooled with those in which the lack of pride in the husband's accomplishments was more explicit. The HP and LP families were compared to determine whether or not the difference between the groups could be significant for this factor. Table XV presents the number of mothers in each group who either did or did not express pride in their husbands. The difference is not significant. It appears that mothers from both groups are equally likely to express lack of pride or open dissatisfaction with the behavior or accomplishments of their spouses. On the other hand, almost 78 per cent of the mothers who responded to this question did express some pride in their husbands.

The frequency of expressions of pride in the husband's occupation, as compared with other categories, was low, but perhaps realistic in the light of the relatively unskilled level and uncertainty of the work done by a large proportion of the husbands. The fact that a respondent expresses pride in her husband's work does not necessarily mean that he works at a job having high status. Two women, both mothers of HP children, said that they were proud when their husbands became painters. One of these men had received a diploma and a letter from the governor for completing training as a painter, and the wife was very proud of this recognition of his accomplishment.

Do feelings that Mexican-Americans are discriminated against arise as a barrier to achievement motive? As a part of question number 58 ( Appendix A ) the subjects were asked, "Do you feel that prejudice against Mexican-Americans has prevented you ( your husband ) or any of your friends from getting a better job?" A comparison of the responses to this question is presented in Table XV. There is no statistically significant difference between the numbers of subjects in the two groups who stated that they or members of their families had been victims of prejudice, or had heard about instances of discrimination against Mexican-Americans in Tucson. Many of those who reported no discrimination said that they believed the Mexican-Americans in Tucson are generally treated fairly, but volunteered reports of prejudice and discrimination against friends and relatives in Texas and California.

Many who reported that they knew of no discrimination in Tucson made specific statements to the effect that they believed that most of the trouble experienced by Mexican-Americans in getting jobs was related to their lack of proficiency in English or lack of adequate educational background. Some cited cases of relatives whom they believed had received preferential treatment on their jobs because of their ability to speak Spanish and to work with Spanish speaking customers or clients. It is quite possible, however, that if contact were maintained over a longer time than the period of one interview, some of the subjects who stated that discrimination does not exist in Tucson would have reported their knowledge of some form of bias. However, on the basis of the verbal reports of the subjects it seems that training and language are seen as barriers to advancement more often than is ethnic identity.

Question 73 of the Interview Schedule ( Appendix A ) asks, "If you could make one change in the life of your family, what would it be?" Many subjects replied that they would make no change in their present life. Expressions of a desire for change are compared with statements indicating satisfaction with the status quo in Table XV. The responses of the two groups were not significantly different here.

The majority of those subjects who responded that they would like to make some change in their lives wanted a better or bigger house, or ". . . to live better."

As an indirect way of finding what kinds of things were desired by the subjects who were interviewed, the interviewers asked the question, "If you suddently inherited a large sum of money from a long lost relative, what are some of the things you would do with the money?" (Question 74, Appendix A). The total number of responses was tabulated and the results were dichotomized in two ways. First, responses were classified as statements indicating that immediate use would be made of the money, as opposed to uses that involved a future orientation. The second comparison was between responses that involved the use of a part of the money for education, as compared to all other uses.

Table XV presents a comparison of the number of HP and LP subjects who expressed future oriented uses as opposed to present uses for money received from a hypothetical inheritance. The difference ( $\chi^2 = 6.764$ ) between HP and LP subjects on this comparison is significant at the .01 level, with more HP than LP subjects indicating future oriented uses for hypothetical money received from an imaginary inheritance. Even so, a rather large number of the HP group, almost 23 per cent, also expressed immediate uses. Considering the responses in context, it is difficult to interpret these statements as representing the expression of a value system placing the immediate above the future. For example, Mrs. C__ answered, "Well, first I would run to the store and I would buy them [the children] a lot of food - then clothes." Immediate needs were also expressed by Mrs. J__, who said, "Oh, I would buy my kids food, clothes, and everything they need - pay my bills, take a vacation and buy a new car."

Some subjects who stated uses that have been classified as immediate uses said in addition that they would save for the education of their children, or put some money in the bank for emergencies. The first reasons given, however, were almost always to meet immediate needs - needs which were obviously real. Many mothers expressed sorrow that they couldn't dress their children well to go to school, and explained how food had to be portioned out evenly so there would be enough to go around.

If immediate, pressing needs for necessities cannot be met, it does not seem reasonable that one would give priority to future goals. While, in general, most HP subjects were more fluent in the responses to questions, LP subjects tended to be more fluent than HP subjects in response to this question. The significance of the difference between the two groups in their proposed uses for the imaginary inheritance may display nothing more than the fact that there is greater economic deprivation and uncertainty among the lower group, resulting in greater expression of need.

Table XV presents a second comparison based upon responses to Question 74. The number of HP and LP subjects who stated that they would use a portion of the imaginary inheritance to insure the education of their children is compared with the responses which named only other uses. The difference between the groups was not significant.

The children who were the object of most of the questioning by the field workers were only six years old, and most mothers had not begun to think about the kinds of occupations they would like to see their children enter upon becoming adults. Among those who had responses for this question, very few expressed any very realistic expectations that their children would enter professions. The majority of mothers offered only very general responses, the most common of which expressed the idea that any kind of honest work would be satisfactory. Many did hope for jobs in which work would not be too hard, meaning physical labor and being out in the sun. A number of husbands were present during the interviews, and some of them expressed the hope that their sons would not have to work at the jobs that furnished their own livelihood.

When asked about the kinds of work they would not want their children to do when they became adults, more mothers had definite responses. Table XV compares the number of mothers from the HP and LP groups who designated certain unskilled, manual, or domestic labor as undesirable for their children. The difference ($X^2 = 4.089$) for this comparison is significant at the .05 level, indicating that more HP mothers express specific desires that their children will not enter occupations such as hotel maid, cleaning woman, or laundry worker for women, or construction laborer or roofer for men.

Subjects were asked how much education they would want their children to attain, and how much they thought it would actually be possible for them to attain. The objective of this questioning was to obtain a comparison between the mothers' desires and their realistic estimate of probable outcomes. Some mothers did state that for specific reasons, predominantly financial, the children might not be able to obtain as much schooling as the family would desire. In many cases, however, the subject's assessment was so vague that it seemed that the mother had not given the problem sufficient thought to determine the probable discrepancy between desires and outcomes. Those who were indefinite were lumped with those who definitely thought there might be a discrepancy between their hopes and what might be achieved. These responses are compared with those indicating reasonable assurance that the children will attain the level of formal education desired for them by their parents. Table XV presents the number of HP and LP responses which fell into either of these two classes of the dichotomy. The difference between the groups, as measured by chi-square ( 10.477 ), is significant at the .01 level, and approaches significance at the .001 level. HP mothers are apparently much more certain that their children will find it possible to stay in school long enough to reach the level of completion desired by their parents.

Table XV presents a comparison of the number of HP and LP mothers who stated that education is more important for boys than for girls, and who believe that it is of equal importance for both. There is no significant difference between the number of HP and LP mothers who expressed the belief that education is equally as important for a girl as for a boy. This should not be interpreted as an indication that the mothers expressing this view wanted careers for their daughters. Mrs. S__'s comment is typical of many of the women who expressed the need for a girl to get a good education. She said, "For the boys, by the time they're a man it's their job to support a home, and a girl is going to be supported. But you never know when she'll be a widow, so she must be prepared." Less typical, but illustrative of the acceptance of the woman's role in the home, is Mrs. L__'s comment. She told the interviewer, "The husband needs the education to support a family, and the wife needs the education to distribute it in the home, so that the children can take the example from them."

For the mothers who want their daughters to get a good education, the need appears to be seen for knowing the things necessary to make a good home, and to make it possible for the girl to work in case of an emergency.

Mothers were asked how they expected their child to do in school. . Responses were classified on the basis of the mother's estimate of her child's ability. One category consists of responses indicating that the mother thought her child was able. The other category consists of responses indicating that the mother felt the child was only fair or slow. Table XV presents the number of mothers in each group who responded in these contrasting ways. The group differences in the mothers' estimates of their children's ability is significant at the .02 level. Mothers in the HP group express greater confidence in the ability of their youngsters.

## Language

In an article discussing "Barriers to Mexican Integration in Tucson," Officer (1951, 7) stated that "My opinion is that the greatest hindrance to complete cultural assimilation of Tucson's Mexicans is the language problem." This opinion has apparently been widely shared by educators, if we can judge from the curricula adjustments made for Mexican-American children. The 1-C program followed for years in Tucson as a means of introducing children to English prior to beginning first grade work has placed the emphasis on language. The current mania for structural linguistics as a panacea for the educational problems of Mexican-American children is another example of a language centered curriculum emphasis. The Mexican-American child is viewed as a speaker of a foreign language, and his greatest educational needs are supposed to be to learn English as a second language.

Our data pertaining to language are not sufficiently sophisticated to present a serious challenge to this point of view but some interesting and suggestive comparisons of vocabulary scores can be made. In order to determine whether there were real language (vocabulary) differences within and between the two groups of children involved in this research, the t test was used to examine the differences between vocabulary scores in both languages within and between the groups.

In Table XVI the within group differences for both languages are presented. The data represent two groups of test scores on the same group, therefore calling for procedures devised for determining the difference between correlated means.

TABLE XVI

WITHIN GROUP DIFFERENCES BETWEEN ENGLISH AND SPANISH VOCABULARY SCORES

| Group | N | Vocabulary Test Means English | Spanish | D | $SE_D$ | t | Level of Significance |
|---|---|---|---|---|---|---|---|
| HP | 37 | 87.81 | 79.16 | 8.65 | 3.94 | 2.194 | .05 |
| LP | 37 | 52.00 | 65.32 | 13.32 | 2.19 | 6.192 | .001 |

As indicated in Table XVI, the HP mean is higher for English Vocabulary, as measured by the Van Alstyne Picture Vocabulary Test, and the difference is significant at the .05 level. For the LP group the Spanish Vocabulary mean, as measured on a Spanish translation of the Van Alstyne Picture Vocabulary Test, is higher than the mean for English Vocabulary, and the difference is significant at the .001 level.

The between group differences for the English and Spanish scores on the Van Alstyne Picture Vocabulary Test are compared in Table XVII.

## TABLE XVII

## BETWEEN GROUP DIFFERENCES FOR ENGLISH AND SPANISH VOCABULARY SCORES

| | Groups | | | | | | | Level of Significance |
|---|---|---|---|---|---|---|---|---|
| | HP Children | | LP Children | | | | | |
| Language | N | M | N | M | D | $SE_D$ | t | |
| English | 38 | 87.39 | 42 | 52.00 | 35.39 | 2.22 | 15.94 | .001 |
| Spanish | 37 | 79.16 | 37 | 65.32 | 13.83 | 3.61 | 3.83 | .01 |

On this test of a sample of English vocabulary, the HP group scored higher than the LP group, and the difference is significant at the .001 level. The direction and magnitude of this difference is to be expected, since the English administration of the Van Alstyne Picture Vocabulary Test served as one of the criterion measures for differentiating between high potential and low potential children.

The scores for the Spanish administration of the same test show a difference in favor of the HP group, and in this case the difference is significant at the .01 level. This finding is more surprising, considering the common assumption that children who speak the most Spanish also speak the least English.

### Summary

In this chapter the environmental backgrounds of the two samples of children were compared for likenesses and differences. Wherever countable data could be tabulated, the possibility of significant differences between the groups was examined. Table XVIII presents a summary of the categories tested for differences, the statistics used, and the results of the comparison.

The summary table indicates that the analysis of the residence patterns of the HP and LP families revealed no differences in the number of children or parents who were born in Mexico. The HP families did, however, display greater residential stability, as estimated from the length of residence in the present dwelling. The difference in stability of residence was significant at the .001 level.

In the category of family structure, the only difference found between the HP and LP groups was in the number of children in the family. LP families had more children than the HP families, and the difference was significant at the .01 level. Otherwise, the groups were essentially equal with regard to the number of extended families represented, in the marital stability of the mothers, and in the number of families having a father or father substitute present in the home.

There was no significant difference between the educational level attained by fathers as compared with mothers for the combined groups. Neither was there a difference between the educational levels of HP and LP fathers. However, the difference between the educational levels of HP vs LP mothers was significant at the .05 level.

## TABLE XVIII

## SUMMARY OF COMPARATIVE DATA FOR HP AND LP SAMPLES

| Category | Comparison | Statistic | Value | Direction of Difference | Level of Significance |
|---|---|---|---|---|---|
| Residence Patterns | Stability of Residence | Mann-Whitney U Test | $z = 3.25$ | HP > LP | .001 |
| | Natural Origin of Children | Chi-Square | $\chi^2 = 1.317$ | No difference | Not significant |
| | National Origin of Parents | Chi-Square | $\chi^2 = .504$ | No difference | Not significant |
| Family Structure | Extended Family | Chi-Square | $\chi^2 = .038$ | No difference | Not significant |
| | Marital Stability | Chi-Square | $\chi^2 = .007$ | No difference | Not significant |
| | Father in Household | Chi-Square | $\chi^2 = 2.092$ | No difference | Not significant |
| | Number of children | Mann-Whitney U Test | $z = 2.45$ | LP > HP | .01 |
| Educational Status of Parents | Education: Mother's vs Father's | Mann-Whitney U Test | $z = .597$ | No difference | Not significant |
| | Education: HP vs LP Father's | Mann-Whitney U Test | $z = 1.437$ | No difference | Not significant |

Table XVIII--Continued

| Category | Comparison | Statistic | Value | Direction of Difference | Level of Significance |
|---|---|---|---|---|---|
|  | Education: HP vs LP Mother's | Mann-Whitney U Test | $z = 2.302$ | HP > LP | .05 |
| Occupational Status of Parents | Employment of fathers: full time vs not full time | Chi-Square | $\chi^2 = 7.843$ | HP > LP | .01 |
|  | Occupational status | Chi-Square | $\chi^2 = 4.403$ | HP > LP | .05 |
|  | Family dependent on Mother's income | Chi-Square | $\chi^2 = .257$ | No difference | Not significant |
| Linkages and Interpersonal Relationships | Friends in Anglo neighborhoods | Chi-Square | $\chi^2 = .172$ | No difference | Not significant |
|  | Prefers relatives as associates | Chi-Square | $\chi^2 = .812$ | No difference | Not significant |
|  | Having friends as associates | Chi-Square | $\chi^2 = .320$ | No difference | Not significant |

Table XVIII--Continued

| Category | Comparison | Statistic | Value | Direction of Difference | Level of Significance |
|---|---|---|---|---|---|
| | Memberships in sodalities | Chi-Square | $\chi^2 = 3.908$ | HP > LP | .05 |
| | Periodicals in home | Chi-Square | $\chi^2 = 10.625$ | HP > LP | .01 |
| Travel and Diversion | Contact with Mexico | Chi-Square | $\chi^2 = .206$ | No difference | Not significant |
| | Weekend travel | Chi-Square | $\chi^2 = 16.236$ | HP > LP | .001 |
| | Educational travel | Chi-Square | $\chi^2 = 5.014$ | HP > LP | .05 |
| | Out of town travel | Chi-Square | $\chi^2 = .948$ | No difference | Not significant |
| | Travel to visit kin | Chi-Square | $\chi^2 = 1.808$ | No difference | Not significant |
| | Travel for experience | Chi-Square | $\chi^2 = 4.851$ | HP > LP | .05 |
| | Active diversion | Chi-Square | $\chi^2 = 8.263$ | HP > LP | .01 |
| | Diversion away from home | Chi-Square | $\chi^2 = 2.924$ | No difference | Not significant |
| Values and Achievement Motive | Value family life | Chi-Square | $\chi^2 = .269$ | No difference | Not significant |
| | Value financial security | Chi-Square | $\chi^2 = .746$ | No difference | Not significant |

Table XVIII--Continued

| Category | Comparison | Statistic | Value | Direction of Direction | Level of Significance |
|---|---|---|---|---|---|
| | Value good behavior | Chi-Square | $\chi^2 = 1.868$ | No difference | Not significant |
| | Pride in husbands | Chi-Square | $\chi^2 = 1.014$ | No difference | Not significant |
| | Feel discrimination against Mexican-Americans | Chi-Square | $\chi^2 = .005$ | No difference | Not significant |
| | Desire change | Chi-Square | $\chi^2 = .004$ | No difference | Not significant |
| | Future orientation | Chi-Square | $\chi^2 = 6.764$ | HP > LP | .01 |
| | Desire to save for education of child | Chi-Square | $\chi^2 = .881$ | No difference | Not significant |
| | Perceive unskilled labor as undesirable | Chi-Square | $\chi^2 = 4.089$ | HP > LP | .05 |
| | No discrepancy between educational desires and expectations | Chi-Square | $\chi^2 = 10.477$ | HP > LP | .01 |

Table XVIII--Continued

| Category | Comparison | Statistic | Value | Direction of Difference | Level of Significance |
|---|---|---|---|---|---|
| | Value education for boys over education for girls | Chi-Square | $\chi^2 = .029$ | No difference | Not significant |
| | High estimate of child's ability | Chi-Square | $\chi^2 = 6.099$ | HP > LP | .02 |
| Language | HP English vocabulary vs Spanish vocabulary | t Test | $t = 2.194$ | Eng > Dp | .001 |
| | LP English vocabulary vs Spanish vocabulary | t Test | $t = 6.192$ | Eng > Sp | .001 |
| | English vocabulary: HP vs LP | t Test | $t = 15.94$ | HP > LP | .001 |
| | Spanish vocabulary: HP vs LP | t Test | $t = 3.83$ | HP > LP | .01 |

In the occupational category more HP fathers than LP fathers were employed full time, the difference being significant at the .01 level. HP fathers were also more frequently employed in higher status occupations than LP fathers. The difference between the status levels of the fathers' occupations was significant at the .05 level.

Few families were either partially or fully dependent upon income earned by mothers of children in the sample groups. There was no significant difference between the groups on either the variable of both parents working, or on the number of families solely dependent upon mother's income.

Very few subjects claimed to have friendship associations with persons living in predominantly Anglo neighborhoods. The difference between the samples was not significant for this variable. The majority of subjects in both groups preferred associations with relatives rather than with friends, and 40 per cent of the subjects in the combined groups indicated that they had no friends or very few friends. The difference between the two groups on these factors was not significant. There was a difference, significant at the .05 level, between the groups on the variable of sodality membership. More families in the HP group were represented in sodalities, but even for this group, the associations in which membership was claimed were apparently of predominantly Mexican-American composition.

Considering periodical publications as a possible avenue of vicarious contact with the wider community, the HP and LP groups were compared to determine if there was a difference in the number of homes having regular access to periodicals. The difference between the samples was .01, with more homes in the HP group reporting more periodicals.

In the category of Travel and Diversion, there was no difference between the groups in their contact with Mexico. HP families more frequently went on weekend trips, with the difference being significant at the .001 level. Families in this group also went on more weekend outings having educational value for the children. In this case the difference between HP and LP families was significant at the .05 level.

When all out-of-town travel undertaken during the past two years was taken into account, there appeared to be no difference between the samples, and both groups were found to be equally involved in traveling for the purpose of visiting relatives. Families of HP children were more likely than LP families to have the objective of broadening the experiences of their children as one reason for their travel. The difference between groups was significant at the .05 level.

The favorite diversions of the two groups of families were compared, revealing that HP families engage in more active diversion than LP families. The difference for this variable was significant at the .01 level, but there was no difference between the groups in the number of activities taking place at home as compared to those which are undertaken away from home.

The examination of values and other factors which might affect achievement motive displayed no differences between the groups on the factors of placing a high value upon family life, valuing of financial stability, valuing good behavior, or in the number of women who expressed pride in their husbands.

Few subjects felt the presence of significant discrimination against Mexican-Americans in Tucson. Most felt that difficulties encountered were the result of language or educational deficiencies. There was also no difference between the sample groups in their desire or lack of desire for a change in the life of their families.

HP families more frequently expressed desires that reflected a future orientation, but in view of the real and immediate needs of so many of the families, the difference, significant at the .05 level, may reflect only that the LP group is more seriously deprived economically. There was no significant difference between the number of subjects in the two groups who indicated a desire to set money aside for the education of their children.

A difference which was significant at the .05 level was observed in the kinds of jobs which mothers hoped their children could avoid upon becoming adults. More HP than LP mothers hoped their children would not become involved in low status, physical labor.

Both HP and LP mothers tended to express the belief that girls need a good education as much as boys do, but reasons usually dealing with home management rather than career were given as the basis for the educational requirement for girls.

Mothers of HP children tended to have a higher opinion of the child's ability. The difference was significant at the .02 level.

In the language category differences were significant for each comparison tested. In the HP group, English vocabulary scores were higher than Spanish vocabulary scores, and the difference was significant at the .05 level. In the low group the situation was reversed, except that the level of significance for the difference was .001.

The HP subjects tested higher than the LP subjects on both the English vocabulary (difference significant at .001 level) and on the Spanish vocabulary test (difference significant at .01 level).

The analysis indicates that the HP and LP sample families are very much alike on many of the categories examined. There were, however, 19 areas in which significant differences were found. In the following chapter the implications of these similarities and differences are explored.

## CHAPTER VI

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In Tucson, Arizona, as well as most other communities in the American Southwest, Mexican-Americans comprise a large minority group. The majority of these people speak Spanish, sometimes as their only functional language. While some of them are successful in school and move easily into the activities of the dominant society, a disproportionate number of the children in school fail to become functionally adequate in the skills that are prerequisite to a productive role in the life of the community.

This study was designed to investigate, in Mexican-American homes, a set of environmental variables that might be related to intellectual development of the kind required in the schools and in the economic life of the community. The major purpose of the study was to determine what differences, if any, exist in the environments of those Mexican-American six-year-olds who seem to show promise of doing well in school, as compared with those who show little aptitude for school tasks. A second aspect of this problem was to determine whether specific aspects of the environment would show a higher relationship to potential for school success than would a conventional measure of social status.

## Summary

1. Rationale for the Study. Most psychologists have become unwilling to make inferences concerning innate intellectual capacity on the basis of intelligence test scores, especially for subjects who are not middle class Americans. It must be admitted, however, that such tests are related to success at many of the kinds of tasks required in our language- and problem-centered society. Vernon has expressed the view that members of a cultural group may value and furnish experiences for the development of a type of intelligence that is particularly well adapted to the kinds of activities that are characteristic of that culture. He believes that the type of intelligence which is valued in middle-class American culture is well adapted to scientific analysis, mastery of the physical world, large scale and long term planning, and the attainment of materialistic objectives (Vernon 1965, 727). Bruner has also expressed the belief that intellectual development is dependent upon problem solving techniques learned through contact with one's culture (1964, 1).

In brief, the balance of opinion in psychology seems to be swinging away from an emphasis on the biologically determined aspects of intellectual potential, which cannot be measured, and be concentrating on learning and cognition as important aspects of intellectual development. The writings of Hebb (1949), Bloom (1964) and Hunt (1961) all suggest that a lack of variety in early childhood experiences may be detrimental to intellectual development, and may partially explain the apathy toward new experiences that is so often witnessed in children from disadvantaged backgrounds.

This emphasis on experience as a necessary element in intellectual development points to a need for more information concerning the specific nature of intellectually stimulating environments. This study was an attempt to shed additional light on the nature of the relationships between selected environmental factors and the development of intellectual ability of the type that contributes to successful functioning in our society.

2. Subjects. The subjects for this study were 80 Mexican-American six-year-olds who spoke some Spanish and who had a Spanish surname. They were selected from a population of 378 children who met these criteria and who attended schools in areas of the community that are heavily populated by Mexican-Americans.

One sample, designated as HP (high potential), consisted of children who achieved the highest scores of the 378 children who were tested on criterion measures which were assumed to predict success in school. The second sample, designated as LP (low potential), consisted of those children who received the lowest scores on the criterion measures.

3. Method. The home environments were studied by interviewing the mothers of children selected for our samples. The

interviews were conducted in either Spanish or English or both, depending upon the preference of the subjects. A focused interview technique and a revision of the interview schedule developed by Dave (1963) and Wolf (1963) were used by the interviewers. Rating scales were used to measure 33 characteristics relating to a set of nine Environmental Process Variables. The Index of Status Characteristics (Warner, 1949) was also computed for each family. In addition, a descriptive analysis was made on the basis of the content of the interview protocols.

## Findings

A multivariate analysis using Hotelling's $T^2$ was used to examine the hypothesis of no difference between the environmental backgrounds of HP and LP children. The resulting F ratio of 6.7643 was significant at the .01 level $\left[F_{.01} \text{ (df } 9, 70) = 2.67\right]$ and the null hypothesis was rejected. The HP mean for every environmental variable was greater than the mean for the LP group, but in the discriminant function four of the environmental variables (Intellectuality in the Home, Work Habits of Family, Identification with Models, and Range of Social Interaction) were weighted negatively.

The hypothesis that the relationship between potential for school success and environmental factors would be higher than the relationship between potential for school success and a measure of social status was examined by testing the significance of the difference between the correlations for these relationships. The difference was not significant, and the null hypothesis was retained.

The descriptive analysis of the environments revealed many areas of similarity between the two samples, but a number of differences were also discovered.

Most of the children and their parents were born in the United States, and there was no difference between the HP and LP groups on the number of individuals who had been born in Mexico.

On most aspects of family structure that could be identified in our data there were no differences between the samples. The high divorce rate was essentially the same for mothers of both groups, and similarly, almost all mothers who had been divorced had taken a new partner. There was a father or father substitute in almost every home.

LP families did have significantly more children than HP families, and several families in both groups had other relatives living in the household as extensions to the nuclear family. It would be fair to say that most of the homes, especially in the LP group, were crowded.

Of the parents for the combined groups, only 13 of a total of 143 for whom data were available had graduated from high school.

Comparisons of the educational level attained by fathers and mothers, HP fathers and LP fathers, and HP and LP mothers, a significant difference was found only in the educational attainment of the mothers. HP mothers had stayed in school longer than LP mothers.

Most fathers in the families surveyed were employed in unskilled work, although there was a significant difference in favor of the HP group on the status level of the fathers' occupations. While many men in both groups were laborers, more fathers in the HP group had relatively steady, full-time jobs. Very few of the mothers worked outside the home. Some lamented their lack of training for outside employment but most felt their place was at home.

Interpersonal relationships for both groups were primarily confined to associations with others of Mexican-American ethnic identity. Members of HP families did claim membership in sodalities with significantly greater frequency than the contrasting group, but often the composition of these organizations was mostly Mexican-American. This is largely because many of the sodalities were neighborhood based, and the residential patterns account for the homogeneous ethnic composition of organizations such as Boy Scout troops.

Most subjects preferred the company of relatives rather than friends. Travel was largely for the purpose of visiting kin. No differences between the groups were found in the family contacts with Mexico, out of town trips, or travel to visit relatives. HP families engaged in more weekend travel and outings, travel for educational reasons, and travel to gain experiences. These families were also more likely than LP families to engage in active, as compared to passive, diversions.

Subjects in both groups valued family life and financial stability. For many, the latter seemed to be unobtainable. Few subjects expressed the belief that discrimination acted as a barrier to the advancement of Mexican-Americans in Tucson. Most recognized that language and educational deficiencies placed them at a disadvantage in the competition for jobs.

There was no difference in the number of mothers in the two groups who voiced a desire for change, as compared with those who were satisfied with the status quo. The subjects in the HP group expressed a future orientation in the use of money more frequently than did the LP subjects, but there was no difference in statements concerning the desire to save for the education of the children.

More HP than LP mothers hoped their children could avoid unskilled work as adults, and HP mothers were more apt to believe that their children were bright and would be able to attain as much formal education as the parents wished. Both desires and expectations were generally limited to high school graduation. Both groups considered education to be as important for a girl as for a boy.

HP children scored higher on English than on Spanish vocabulary. Nevertheless, their Spanish scores were significantly higher than the Spanish scores of LP children. LP children scored higher in Spanish than in English. All inter- and intra-group differences on the language measures were statistically significant.

## Conclusions and Interpretations

The data indicate that the children in the HP group come from backgrounds that offer a greater variety of stimulating experiences than is available to most children in the LP group. This finding lends support to the theoretical position reviewed in Chapter II, although alternative explanations are possible.

The presence of environmental stimulation on the one hand, or the absence of it on the other, seems to be related to social status. Experiences that would facilitate intellectual development are more common among higher status families. This would be expected, since mobility and a certain amount of money are necessary in order to go places and do things. At the present time, a family of little means cannot even visit the national recreation areas free of charge.

There were a few instances in which families who were very poor provided a rather rich environmental setting for their children.

Social class per se is not the important variable. The customary activities of the people who happen to belong to particular social strata are of primary importance.

Our evidence seems to refute the assumption that children from families that are "most Mexican" in their behavior and outlook will have the most difficulty in school. Individuals of families which have arrived rather recently from Mexico were no more common in the LP group than in the HP group. HP families also had as much contact with Mexico as the LP group, and one gains the impression from the interview protocols that HP subjects probably attend fiestas and other events associated with Mexican culture more frequently than do LP subjects. When we add to these observations the fact that HP children scored significantly higher than LP children on a test of Spanish vocabulary, it begins to appear possible that HP children come from families which participate more fully in both Anglo and Mexican culture.

In most categories pertaining to travel and diversion, the differences between the groups reflected the fact that HP families travel more, participate in more diversions of an active nature, and travel for reasons that are related to providing experiences for the children. In many HP families the subjects expressed the attitude that they wanted their children to be able to see and do a variety of things.

LP subjects often expressed a desire for a vacation, but did not verbalize the same attitudes about experiences.

The data indicate that HP children scored higher in vocabulary for both languages than the LP children. These data also reveal that LP youngsters come from homes in which there are generally more siblings. It seems safe to speculate that mothers who have more children to care for can spend less time in verbal interaction with any particular child. There is less time for answering questions, explaining and encouraging a questioning attitude, or probably even for naming the objects in the environment. This generalization may not be true for mothers who recognize the need for such verbal interaction, and who make it a point to see that it is provided. In the case of many of the LP children, it appears that they learn little of either English or Spanish. The paucity of environmental experiences available, plus the language limitations, would certainly seem to be detrimental to intellectual development.

Although the HP families appear to have a somewhat wider range of interpersonal relationships through their memberships in sodalities, it seems clear that there are very few linkages with institutions of the wider community, for either group. In the area of interpersonal relationships, most persons in both groups associate largely with relatives, most of whom are of comparable social status and who work at jobs comparable to those of the child's parents. There appears to be little chance for the child to identify with a variety of models, or for his parents to be in close touch with the attitudes and expectations of the rest of the community. Points of articulation between the Anglo and Mexican-American communities were conspicuously absent for our samples. Even the neighborhood school has not been successful in most cases in maintaining communication with the homes. What teachers frequently interpret as parental apathy toward the school performance of their youngsters is probably just as often bewilderment toward a social institution they do not understand. A few parents did not comprehend the marking system used on report cards, although they may have had a number of children in school. Many mothers do not understand the nature of the relationship between the home life of a child and his performance at school, but this does not mean they are unconcerned.

Most women found something about which to express pride in their husbands, but seldom did these statements have anything to do with an achievement orientation. Most women were proud if their husbands worked steadily. A number of the women found nothing at all to be proud of in their husbands. It is hard to imagine these husbands as achievement models for their sons.

There were comparatively few expressions of a desire to change anything in one's life, except to have a better house perhaps. These attitudes are not indicative of strong achievement motive. But rather than conclude that achievement motive is not a characteristic orientation of Mexican-Americans, we might speculate about probable reasons.

We recall that when asked what they would do with an imaginary inheritance, more HP than LP mothers expressed uses that involved a future orientation. On the other hand, it was quite clear that the uses expressed by LP mothers, and by many HP mothers as well, indicated needs that were real and immediate. The same may be true for jobs. Is a man likely to express a desire for high status employment when his immediate concern is to be able to keep working steadily at the rather unstable job that is providing his current livelihood? There seems to be a need to relate such expressions to some theoretical framework for motivation, rather than to identify such expressions as attitudes or values and pin a label such as "present time orientation" on them.

## Recommended Research

This research has found that there are environmental differences in the backgrounds of Mexican-American children who show promise of doing well in school as compared with those who will probably not do well. The full possibilities of the research instruments as measures for Environmental Process Variables have not been explored because the range of variation in the environmental backgrounds of these children was rather restricted. Neither does this research indicate how these backgrounds may differ from the environments of a range of Anglo children. A stratified cross-cultural comparison of Environmental Process Variables should add to our knowledge of the nature of experiences that might facilitate intellectual development.

This study and the research of Dave (1963) and Wolf (1963) have examined a wide range of environmental factors which are theoretically related to intellectual development. There is a need for similar work focusing in greater depth and detail upon a narrower range of variables. Such a study should probably be based upon observation rather than upon verbal reports to interviewers.

The results of the vocabulary tests in Spanish and English raise a question concerning the assumption that Mexican-American children should be treated as speakers of a foreign language. An emphasis upon drill on pattern structures taken out of the context of communication that is exciting to children, and which places further restrictions upon the variety of experiences available, should be examined critically. Our data suggest that wider experiences should provide a context for language acquisition.

Another questionable practice concerns the urgency with which teachers sometimes push these children to recognize at sight the sterile language of the basal reader before the child has learned to understand and express himself in oral English.

There is no scarcity of programs which resemble in some ways the situation just described. The results of these kinds of programs should be compared, one a longitudinal basis, with a program which extends the experiential base of the children, and which places them in small group situations with adult language models to discuss their observations and experiences.

From the interview protocols it appears that most mothers are very fond of their children and want the best for them. More often than not these mothers knew little of the particulars of the school program, or how their relationships with the child at home might facilitate his work at school. It is possible that action programs could take advantage of this strong feeling of concern for the children's welfare and help these mothers learn to afford facilitating experiences for their children, and to act as models for language. The excellent rapport gained by the Mexican-American girls who conducted the interviews for this research suggests the possibility that sensitive, intelligent Mexican women could be trained to instruct mothers in the practices that might facilitate the intellectual development of their children before they come to school. It is conceivable that the fruits of such a program could surpass short-term crash programs such as

Operation Head Start. If such a program were feasible, its effectiveness could be evaluated in terms of changes in the attitudes and behavior of mothers, and eventually in the school performance of their children.

Some families living in conditions of severe economic poverty appeared to provide rather rich environments for their children, within the limitations of their finances. These families were definitely the exceptions, but a set of child biographies from these and from sharply contrasting families might offer additional cues concerning the kinds of experiences that contribute to intellectual development, even under the limitations of economic poverty.

Maslow ( 1954 ) has developed a model for motivation. His model is based upon a hierarchy of needs. Higher order needs cannot emerge as effective determiners of behavior until more basic needs have been satisfied in some degree. A large proportion of the subjects in this study seemed to be operating at a level where much of their behavior was motivated by needs to meet physical necessities and to gain self esteem. A series of life histories might be used to examine the appropriateness of Maslow's model as applied to Mexican-Americans.

Research is also needed to determine the degree to which models in a young child's peer group could affect his intellectual and language development. In Tucson, at the present time, students from one predominantly Mexican-American neighborhood are taken to school by bus. The school to which they are taken is also predominantly Mexican-American. It should not be difficult to bus these children to a school in a neighborhood where the Mexican children would have a range of good English language models among their peers. Comparison groups could be set up in other schools for the purpose of evaluation.

# APPENDIX A. INTERVIEW SCHEDULE

This interview schedule is based on the instrument used by Dave ( 1964 ) and Wolf ( 1964 ) in their doctoral research at the University of Chicago. Some items are taken directly from their schedule. Other questions are essentially the same as those presented in the original schedule but the wording has been revised. Several additional items have been developed specifically for this research. For those who wish to examine the original instrument it is presented in the doctoral dissertations of the researchers named above.

The following statements were made to each respondent who was contacted and who consented to the interview.

## STATEMENT OF PURPOSE

**This is a study of the kinds of experiences which six-year-old children from this area of the community have had before they entered school, and which they now have outside of school. We hope that such information will make it possible for us to improve the kinds of experiences which schools provide for children.**

**This research project is being conducted by the Department of Educational Psychology at the University of Arizona under the**

sponsorship of the United States Office of Education, and with the cooperation of the Tucson Public Schools.

## GUARANTEE TO RESPONDENT

Any information which you may give to the interviewer will be held strictly confidential. In analyzing the information obtained in the interview your name will never be associated with the data you have given us. You will be identified only by a number. Thus, your privacy will be insured.

## EXPLANATION OF THE INTERVIEW PROCEDURE

First I would like to ask you some questions about the experiences your children have had, and about some of the things you do as a family. For this part of the interview I will record your answers on a tape recorder. If you feel uncomfortable about the recorder just say so and I will not use it. Its purpose is simply to help me remember later what we say during our conversation. If at any time during the interview you would like to discuss something that you would prefer not to have recorded, just say so and I will turn the recorder off.

After the interview we would like to fill out a questionnaire which asks for some routine information about your family. I will write the answers as you talk so that, if necessary, I may clarify the questions as we go along.

# INTERVIEW SCHEDULE

Identification Number ____________ Date of Interview ____________

Name of Interviewer ________________________________________

Statement to respondent: We will be talking primarily about (Name child from sample), your son (daughter) who is now in first grade. From time to time we will also want to talk about some of the other members of your family.

1. How do you expect ______________ to do in school?
   What kinds of grades do you expect him to receive?
   Why do you think as you do?
   Could you guess what his best subjects will be? His weakest?
   What makes you think so?

2. How do your other children (if any) generally do in school?
   Are you satisfied with their progress?
   What grades satisfy you?

3. What are your favorite recreational pasttimes?
   Your husband's?
   What recreational activities do you and your family engage in on weekends?
   What places have you visited on weekends during the past six months?
   (If no response, suggest a place to stimulate recall)

4. How far ahead of time do you usually plan your weekends and vacations?
   Who usually makes the plans?

5. Where have you, as a family, traveled during the past two years?
   Why were these particular places chosen?
   What specific activities take up most of your time at these places?

6. What newspapers and/or magazines do you subscribe to?
   Do you encourage your children to read them? How do you encourage them?
   Do you discuss the articles or stories you have read when the children are present? Give examples.
   Do any of your children participate in such discussions?

7. What kinds of lessons do your children take? (musical, dance, etc.)
How did they get started?

8. What hobbies, if any, do your children have?
How did they get interested in these hobbies?

9. What kinds of toys, games, or books, has your child had during the past two years? (Attempt to get subject to name specific games or books.)

10. Do your children know where the library is? Do they ever go there?
If so, how often? With whom?
Has (name 1st grade child) ever gone there with them?
What kinds of books do you like to see your children use?
Where else do they obtain books?

11. What utensils or tools do you permit him (her) to operate?
About how old was he (she) when he (she) started using these?
Does someone explain the use of these and tell him (her) their names?

12. What kinds of things do you most frequently talk with your children about?
Can you give an example of a conversation you have had with him (her) recently.

13. When your children are home, where do they study?
What kinds of supplies are available for them to work with when they study?

14. Do you have a dictionary in your home? If so, what kind(s)?
Where are they kept?
How often do your children use the dictionary?
How often do you?
When your children use the dictionary - at whose initiation - theirs or yours?
What other ways do your children have of learning new words?

15. Do you have an encyclopedia in your home? If so, what kind?
When did you get it? Why?
Where is it usually kept?
How often do you use it?
How often do your children use it?

16. Do you have any other kind of reference or fact book?
When did you get it? Why?
Where is it usually kept?
In what other ways does your child locate answers to his questions?

17. Did you teach your child to read or count or print his name or anything like that before he went to school?
If so, how much?
Do your older children receive homework assignments?
Do you or your husband help them with their assignments?
About how much time per week?

18. Do you have any workbooks or other kinds of learning materials which you use to help your children in their learning?
What other steps do you take to insure that your child keeps up in his school work?

19. How often do you and your husband discuss your children's progress in school? What usually results from these discussions?

20. When does your child usually eat dinner on weekdays?
Who eats with him?
Who does most of the talking at the dinner table?
About what?

21. At what other times are you together as a family on weekdays?
What are some of the things you do together at these times?

22. What are some of the activities your husband engages in with the child on weekdays?
On weekends?

23. Are there any adults outside of you and your husband that your child is particularly friendly with?
If so, what does he seem to like about them?
What do you see as this person's special qualities?

How often does your child see them?
What does he do with them?

24. Did any other adults live with you when your child was younger?
How long did they live with you?
What was the age of ___________ when they left?
( Note: If the child was close to them, ask the following questions )
How much schooling did they have? How would you rate their use of language?

25. Did you have a job outside the home when your child was younger?
If so, who took care of him ( her )?

26. Do you read books to your child?
If so, how old was the child when you began reading to him?
How regularly do you ( or someone else ) read to him ( her )?
What was the last book you read to him ( her )?

27. About how many hours a week does he usually watch TV?
Winter? ________ Summer? __________
What are his favorite programs?
Do you approve of them?
If not, what do you do about them?

28. What are your favorite TV programs?
Did you recommend that any of your children watch any particular program in the past week?
If so, which ones?
Did you discuss any program with one of your children?

29. How would you describe your child's language usage? ( Ask for Eng. and Span. )
Do you help him to increase his vocabulary? If so, how?
Have you helped him to use words and sentences correctly?
How?

30. How much would you estimate you correct him in his speech?
( Give examples )
How particular are you about your child's speech?
Are there particular speech habits of his that you are working on?
Give examples.

31. How much schooling do you wish your child to receive?

32. How much schooling do you expect your child to receive?

33. Do you have any ideas about the kind of work you would like to see your child do when he grows up?
Do you have any ideas about the kind of work you would not like your child to do?

34. Is there any kind of job your husband has always wished he could have?
What factors do you think may have prevented him from getting such a job?

35. What has your husband done that has made you particularly proud of him?
What have other members of your family done that has made you proud?

36. How does your husband feel about the kind of work he is doing?
Is it the kind of work he always wanted to do?

37. How important has education been in achieving your goals in life?
How much importance will education have in the life of your child?
Will his (her) future be affected if he (she) doesn't get as much education as you hope he (she) will?

38. How much education do some of your close friends and relatives have?
How much contact does your child have with these people?

39. Have any of them gone to college, or do their children?
Are there any who did not attend college?
Are there any who did not complete high school?

40. Have you ever met with your child's present teacher?
If so, when? Why?
Who usually initiates parent-teacher conferences?
Is there any purpose for which you would like to meet with his teacher?
What other ways, if any, are you in contact with the school?

41. Do you approve of your child's best friends in the neighborhood and at school?
What are some of the good or bad qualities of his (her) friends?

42. What are some of the activities and accomplishments of your child that you praise and approve of?
What are some of the ways in which you show your approval?
Can you think of any specific things you have shown approval of in the past few days?

43. What kind of high school program would you want your children to enroll in? Why?

44. How often does the school give out report cards?
Who usually signs it? Do both parents see it?
In what ways do you use the report card?

45. Do you discuss the school grades of your children with them?
What particular things do you discuss with them?

46. Are there any things that the school does, or parts of the school program, that you disapprove of? Especially approve of?

47. Do you have college plans for your children?
If so, what have you done to financially prepare for this?
In what other ways, if any, do you prepare him to reach your educational goals for him (her)?

48. About how often do you ask your children how well he is doing in school?
What particular things do you ask him?

49. Do you think it is as important for a girl to receive an education as it is for a boy?
What particular differences do you see in the educational needs of boys and girls?

50. Do you think the school should assign homework?
If so, how much time outside of school should a child spend on schoolwork each day?

51. For your older children, is there any regular amount of time you have them study each day?
How regularly is it followed?

52. Do your children help with the housework or yardwork?
What specific responsibilities do they have?
How faithfully and punctually do they carry these responsibilities out?

53. Is the housework distributed among the members of the family?
If so, who did the planning for the assignments?
How regularly are these assignments followed?
Are the kinds of jobs done by the girls different from the jobs assigned to the boys?

54. Do you ever have to change your own plans because of your child's school work?
If so, what kinds of plans have you had to change?

55. Have you had to give up anything that you wanted, in order to provide for the present or future education of your children.

56. Do you or your husband have any hobbies, or take any courses?
If so, what? How did you get involved in this?
How are you doing it, formally or informally?

57. What kinds of jobs do you think will actually be available to your children when they become adults?
What factors may prevent them from getting the kinds of jobs you would like them to have?

58. What kinds of jobs were available to you ( your husband ) when you began your family?
What factors might have prevented you ( your husband ) from getting a better job?
Does your husband ever expect to have a better job than he has right now?
Do you feel that prejudice against Mexican-Americans has prevented you or any of your friends from getting better jobs?

59. Do you speak Spanish or English more often in your house?
Would you say you speak Spanish all the time? Most of the time?
About half the time? ( Observe )

60. When your children are playing do you talk to them much? ( Or does anyone else? )
Can you think of some examples of the kinds of things you talk about?

61. Do you think that the schooling you and your husband obtained has been very helpful in attaining a "good life"?
What about your friends?
What do you consider a "good life" to be?
Do you talk about this with your child?

62. Do you think schooling will be of more, less, or about the same importance for your children as it was for you and your husband?

63. Could you name some of the things your child has had to play with? (These things don't necessarily have to be manufactured toys.)
Do you talk with him as he plays? Can you give examples?

64. How many adults is your child well acquainted with?
Does he ever imitate the behavior of any of them?
What about people he sees on TV?
What adults do your other children try to imitate? Why do you think they chose these people to imitate?

65. Can you think of any people that your children would like to be like?
Who? What are their occupations?
How much education have they had?

66. What organizations or clubs do you belong to? (Political, PTA, etc.)
What organizations or clubs do other members of your family belong to? (Tucson Boy's Club, Mexican Chamber of Commerce, etc.)

67. Do most other people in these organizations live in your own neighborhood?
In what other areas of town do they live?

68. How often do you (one by one, specify other family members) actually participate in ______________ (Insert organizations named in #66 above.)
In what specific ways do you participate?
Do you, or have you (your husband, etc.), held an office in ____________________ organization?

69. Where do you usually shop for groceries? Other goods?
How often?
Can you name some businesses you have visited during the past two weeks?

70. How often do you go to other areas of town shopping? What stores do you visit?
What shopping centers have you visited recently?

71. Where do your best friends live? How often do you see them?

72. What other people do you enjoy being with? How often do you see them?

73. If you could make one change in the life of your family, what would it be?

74. If you suddenly inherited a large sum of money from a long lost relative, what are some of the things you would do with the money?

# APPENDIX B. RATING SCALES

The 33 rating scales presented in the following pages were used in quantifying the Environmental Process Variables investigated in this study. The rating scales are based on the instruments used by Dave (1964) and Wolf (1964) in their doctoral research at the University of Chicago. Some scales are taken directly from their work. Other scales are essentially the same as those presented in the original instrument, but the wording and some of the descriptive material which serves as a guide for raters has been revised. Several additional scales were developed specifically for this research. Readers who wish to examine the original rating scales will find them presented in the doctoral dissertations of the researchers named above.

## 1a. PARENTAL ASPIRATIONS FOR THE EDUCATION OF THE CHILD

Criteria: *Nature of the educational and vocational goals
*Level of expectation of the educational accomplishment

Questions: 1, 2, 31, 32, 34, 37, 49, 62, 73, 74

Rating Scale:

| | |
|---|---|
| 9 | Beyond four years of college. Occupational expectation requiring very high education. Expectation of best grades in school |
| 8 | |
| 7 | Four years of college. Occupational expectation requiring high education. Expectation of B's with some A's. |
| 6 | |
| 5 | At least through high school. Some college education desired. Moderately high occupational aspiration. Expectation of average or above average grades. |
| 4 | |
| 3 | Only up to high school. Very moderate and uncertain occupational expectation. Concerned more with deportment than with grades. |
| 2 | |
| 1 | Absence of any long term educational and vocational goals. Only narrow and immediate goals. No expectations about grades, or lack of comprehension of marking system. |

## 1b. PARENTS' OWN ASPIRATIONS

Criteria: Present accomplishments
Means of the accomplishments
Future aspirations

Questions: 33, 34, 35, 36, 37, 58, 61, 63, 73, 74

Rating Scales:

| | |
|---|---|
| 9 | Very high accomplishments already attained. Education used as most important means of accomplishments, or, a very keen feeling for not having enough education. Still very high aspirations. |
| 8 | |
| 7 | High accomplishments already attained. Education used as one of the chief means of the accomplishments, or a keen feeling for not having enough education. Still high aspirations. |
| 6 | |
| 5 | Fairly high accomplishments already achieved (e.g., steady employment in a skilled trade). Education used as one of the chief means of the accomplishments, or a keen feeling for not having enough education. Still more, but moderate aspirations. |
| 4 | |
| 3 | Moderate accomplishments (e.g., usually employed in semi-skilled trade). Education played only an incidental role in the accomplishment. Very moderate aspirations. |
| 2 | |
| 1 | Little accomplishments. Education is not considered as a means of any possible accomplishments. Practically no future aspirations. |

## 1c. PARENTS' INTEREST IN ACADEMIC ACHIEVEMENT

Criteria: *Extent of participation in the educational activities (e.g., reading, PTA)
*Keenness for educational progress of the child

Questions: 3, 9, 19, 40, 46, 66

Rating Scale:

| | |
|---|---|
| 9 | Both parents very active in educational organizations and activities. Very particular about the educational progress of the child. |
| 8 | |
| 7 | Both or any one of the parents active in educational organizations and activities. Particular about the educational progress of the child. |
| 6 | |
| 5 | Only one of parents occasionally active in educational organizations and activities. Fairly particular about the educational progress of the child. |
| 4 | |
| 3 | Neither parent participates in educational activities. Express interest in school work brought home by child. Parent more interested in deportment than in school progress. |
| 2 | |
| 1 | None of the parents active in any educational organization or activity. Not at all particular about the educational progress of the child. |

## 1d. SOCIAL PRESS FOR ACADEMIC ACHIEVEMENT

Criteria: *Education of close relatives, parents, friends, and neighbors
*Education of their children

Questions: 38, 39

Rating Scale:

| | |
|---|---|
| 9 | All or most having four years of college and beyond. Their children of college age are in college. |
| 8 | |
| 7 | Most having some college education. Many have finished four years. Most of their children of college age are in college. |
| 6 | |
| 5 | Some having high school completed, or above, and some having high school not completed. Some of their children of college age are in college. |
| 4 | |
| 3 | Many having high school not completed. Most of their children of college age are not in college. Some have dropped out before completing high school. |
| 2 | |
| 1 | Very few having completed high school. Their children of college age are not in college. Most of them have dropped out before completing high school. |

## 1e. STANDARDS OF REWARD FOR EDUCATIONAL ATTAINMENT

Criteria: *Valuing academic accomplishments

Questions: 2, 42, 45

Rating Scale:

| | |
|---|---|
| 9 | Academic accomplishments very highly and invariably praised. Praised more than any other accomplishments. Very high expectations of educational achievements. Selection of gifts invariably having educational value. |
| 8 | |
| 7 | Academic accomplishments are one of the most highly praised accomplishments. High expectations of educational achievements. Gifts very often having educational value. |
| 6 | |
| 5 | Academic accomplishments are frequently praised. Moderately high expectations for educational achievement. |
| 4 | |
| 3 | School work is occasionally praised. Emphasis on encouragement of good behavior. Moderate expectations of educational achievement. |
| 2 | |
| 1 | The child's behavior is not praised at all. |

## 1f. KNOWLEDGE OF THE EDUCATIONAL PROGRESS OF THE CHILD

Criteria: *Extent of knowledge of child's educational progress
*Extent of knowledge of the content of the school program

Questions: 1, 44, 48

Rating Scale:

| | |
|---|---|
| 9 | Detailed, up-to-date knowledge of daily progress of child in school. Knowledge of specific activities of the class. Well aware of the content of the school curriculum. |
| 8 | |
| 7 | Detailed knowledge of daily progress of the child in school. Knowledge of general types of activities being pursued in the child's class. |
| 6 | |
| 5 | General idea of child's school progress in terms of areas of strengths or weaknesses. Awareness of one or two of the classroom activities at school. |
| 4 | |
| 3 | Some gross idea about the child's school progress. Knowledge only of reading, drawing, and playing. Parent knows how often report cards come out. |
| 2 | |
| 1 | No knowledge of child's school progress. No knowledge of activities in which child engages at school. |

## 1g. PREPARATION AND PLANNING FOR THE ATTAINMENT OF EDUCATIONAL GOALS

Criteria: *Financial preparation
*Academic and mental preparation ( e. g. , emphasizing good grades as preparation for higher learning, selecting bright children as friends )

Questions: 40, 41, 43, 45, 47, 55

Rating Scale :

| | |
|---|---|
| 9 | Sound financial preparation. Also academic and mental preparation for higher learning. |
| 8 | |
| 7 | Good financial preparation, or achievement of best grades in the hope of getting scholarships for higher learning. Also fairly good academic and mental preparation for higher learning. |
| 6 | |
| 5 | Moderate financial preparation, or a desire to do it but not yet done. Some efforts toward academic and mental preparation for higher learning. |
| 4 | |
| 3 | Only incidental preparation. No definite plans made yet. Moderately high educational goals. However, the parents are aware of the need for doing financial and other preparation to reach the goals. |
| 2 | |
| 1 | No financial or other preparation. Absence of any higher educational goals. |

## 1h. PARENTAL PERCEPTIONS OF VOCATIONAL ALTERNATIVES FOR MAJOR WAGE EARNER

Criteria: *Variety in vocations seen as possible for major wage earner
*Number of restricting factors perceived

Questions: 34, 36, 58

Rating Scale:

| | |
|---|---|
| 9 | No restrictions perceived. Present employment is a result of complete free choice. |
| 8 | |
| 7 | Perceived small business management or lower status professional vocations possible. Few restricting factors. |
| 6 | |
| 5 | Perceived possibility of a range of clerical or skilled labor vocations possible. Moderate restrictive factors. |
| 4 | |
| 3 | Perceived possibility of fairly steady employment at unskilled or semi-skilled labor. Language or education may restrict future possibilities. |
| 2 | |
| 1 | Perceived only miscellaneous odd-jobs and unskilled labor possible, with long periods of unemployment. Overwhelming restrictions. |

## 1i. PARENTAL PERCEPTIONS OF VOCATIONAL ALTERNATIVES FOR CHILD

Criteria: *Variety in vocations seen as real possibilities for child.
*Number of restricting factors perceived

Questions: 57, 43

Rating Scale:

| | |
|---|---|
| 9 | No restrictions perceived. Child will be free to become whatever he wishes. |
| 8 | |
| 7 | Perceive small business management or lower status professional vocations (e.g., teaching, nursing) possible. |
| 6 | |
| 5 | Perceive clerical or skilled labor vocations possible. Moderate restrictions. Lack of education perceived as restricting factor. |
| 4 | |
| 3 | Perceive possibility of steady employment at unskilled labor. Language or education seen as restricting factor. |
| 2 | |
| 1 | Perceive only miscellaneous odd-jobs, unemployment pattern as possible. Overwhelming restrictions, or, have given no thought to vocational possibilities for child. |

## 2a. QUALITY OF THE LANGUAGE USAGE OF PARENTS ( ENGLISH )

Criteria: *Fluency of expression
*Pronunciation
*Vocabulary
*Organization of thoughts

Evidence: Interview with the mother and tape recording of the conversation.

Rating Scale:

i) Rate each of the four criteria individually on the scale.
ii) Take their average as the overall rating for this characteristic

| | |
|---|---|
| 9 | Excellent |
| 8 | Very good |
| 7 | Good |
| 6 | A little above average |
| 5 | Average |
| 4 | A little below average |
| 3 | Quite below average |
| 2 | Poor |
| 1 | Very poor |

## 2b. OPPORTUNITIES FOR ENLARGEMENT AND USE OF VOCABULARY AND SENTENCE PATTERNS

Criteria: *Variety of opportunities (e.g., books, TV, travel, picnics, verbal interaction in home situations)
*Frequency of opportunities

Questions: 3, 5, 12, 20, 21, 22, 23, 24, 26, 29, 63

Rating Scale:

| | |
|---|---|
| 9 | A great variety of situations available frequently and consistently. |
| 8 | |
| 7 | A good variety of situations available quite frequently. |
| 6 | |
| 5 | A moderate variety of situations available fairly frequently. |
| 4 | |
| 3 | Only a few situations available, infrequently. |
| 2 | |
| 1 | Very limited situations available. Child's speech sometimes discouraged. |

## 2c. KEENNESS OF PARENTS FOR CORRECT AND EFFECTIVE LANGUAGE USAGE

Criteria: *Regularity in reading to the child during pre-school period
*Variety of efforts for increasing vocabulary, and correcting language usage, if needed.

Questions: 12, 13, 15, 16, 26, 29, 30

Rating Scale:

| | |
|---|---|
| 9 | Read to child very regularly, almost every day. Siblings or others also read to him. A great variety of efforts in increasing vocabulary and improving language usage. |
| 8 | |
| 7 | Read to child quite regularly for about three years before he began school. Still read to him occasionally. A good variety of efforts in improving his vocabulary and language usage. |
| 6 | |
| 5 | Read to the child with some regularity. Some specific effort to improve vocabulary and language still continues. |
| 4 | |
| 3 | Some member of family reads to child during pre-school period occasionally but with no regularity. Incidental efforts to improve vocabulary and language usage. |
| 2 | |
| 1 | No one reads to child with any regularity at any time. One or both parents unable to read. Hardly any effort to improve vocabulary and language usage. |

## 2d. PROPORTION OF SPANISH TO ENGLISH SPOKEN IN THE HOME

Criteria: *Respondent's estimate of frequency of use of each language.
*Confirmation of respondent's statement, through observation.

Questions: 59

Rating Scale:

| | |
|---|---|
| 9 | English always used in the home. No Spanish spoken. |
| 8 | |
| 7 | English usually spoken but Spanish sometimes used. |
| 6 | |
| 5 | Spanish and English spoken with equal frequency. |
| 4 | |
| 3 | Spanish usually spoken but English sometimes used. |
| 2 | |
| 1 | Spanish always spoken in the home. No English spoken. |

## 2e. QUALITY OF THE LANGUAGE USAGE OF PARENTS (SPANISH)

Criteria: *Fluency of expression
*Pronunciation
*Vocabulary
*Organization of thoughts

Evidence: Interview with the mother and tape recording of the conversation.

Rating Scale:

i) Rate each of the four criteria individually on the scale.
ii) Take their average as the overall rating for this characteristic

| | |
|---|---|
| 9 | Excellent |
| 8 | Very good |
| 7 | Good |
| 6 | A little above average |
| 5 | Average |
| 4 | A little below average |
| 3 | Quite below average |
| 2 | Poor |
| 1 | Very poor |

## 2f. DEGREE OF LINGUISTIC INTERACTION

Criteria: *Amount and type of verbal interaction involved in interpersonal relations
*Amount of explaining and questioning to child by adults

Questions: 12, 60

Rating Scale:

9 Parent spends much time talking to youngster - explaining and asking questions as child interacts with physical environments.

8

7 Parents spend a good deal of time explaining to youngster and making questions as children interact with environment.

6

5 Parent spends moderate amount of time in verbal interaction and asking questions as child interacts with environment.

4

3 Parent spends little time explaining to youngster of asking questions as child interacts with environment.

2

1 Verbal interaction limited to short commands. No questioning or explaining as child interacts with his environment. That the children "be quiet" as they play is a major concern.

## 3a. AVAILABILITY OF GUIDANCE ON MATTERS RELATING TO SCHOOL WORK

Criteria: *Extent of general supervision regarding school work
*Readiness in guidance when asked for
*Suggestions regarding school work

Questions: 17, 18, 45, 48, 51

Rating Scale:

| | |
|---|---|
| 9 | Very regular general supervision regarding school work. Guidance readily available when asked for. Suggestions given to the child regularly regarding the betterment of school work at the parents' initiative. Both parents provide the guidance and suggestions. |
| 8 | |
| 7 | Regular general supervision regarding school work. Guidance available most of time when asked for. Suggestions given to the child sometimes, regarding the betterment of school work, at parents' initiative. Both parents provide the guidance and suggestions. |
| 6 | |
| 5 | Fairly regular supervision regarding school work. Guidance only occasionally available. Suggestions given to the child regarding betterment of work very occasionally. Only one of parents provides guidance and suggestions. |
| 4 | |
| 3 | Occasionally supervision regarding school work. Guidance only occasionally available. Suggestions given to the child regarding betterment of work very occasionally. Suggestions very general ( e. g., do better next time ). |
| 2 | |
| 1 | No supervision regarding school work. No guidance or suggestions available for the improvement of school work. |

## 3b. QUALITY OF GUIDANCE OF MATTERS RELATING TO SCHOOL WORK

Criteria: *Relevance to specific educational needs of the child
*Consistency
*Competence

Questions: 1, 17, 18, 19

Rating Scale:

| | |
|---|---|
| 9 | Consistent guidance and suggestions based on knowledge of specific strengths and weaknesses of the child in different school subjects. Consistent guidance and preparation during pre-school and early school years. Both parents very competent to give guidance. |
| 8 | |
| 7 | Guidance based on the specific needs of the child for a certain interval. Consistent educational preparation and guidance during pre-school and early school years. One of the parents very competent to give guidance. |
| 6 | |
| 5 | Guidance based on the general deficiency. Some preparation for school learning during pre-school period. More guidance in early school years. One of the parents competent to give guidance. |
| 4 | |
| 3 | Lack of clarity about the specific needs of the child. Some vague directions regarding school work on occasions. No attempt to teach skills such as counting in pre-school period. Poor qualifications to give guidance. |
| 2 | |
| 1 | No guidance. No knowledge of the child's needs in scholastic progress. Little competence to give guidance. |

## 3c. AVAILABILITY AND USE OF MATERIALS AND FACILITIES RELATED TO SCHOOL LEARNING

Criteria: *Selection of the material ( e. g. , Dictionary, Encyclopedia, Workbooks )
*Guidance for the use of the material and educational facilities

Questions: 7, 10, 13, 14, 15, 16, 18, 62, 63

Rating Scale:

| | |
|---|---|
| 9 | Selection of the most appropriate materials according to the educational level of the child. Abundant supply of the educational materials. Appropriate and timely guidance for the use of materials and facilities. |
| 8 | |
| 7 | Selection of generally appropriate material according to the educational level of the child. Fairly abundant supply of educational material. Appropriate and timely guidance for the use of materials and facilities. |
| 6 | |
| 5 | Availability of some educational material. Specific selection according to the child's level only in some cases. Some general guidance for the use of the materials and facilities. |
| 4 | |
| 3 | Very moderate supply of educational material. No specific selection according to the child's level. Only occasional guidance for the use of the material and facilities. |
| 2 | |
| 1 | No availability of educational material in the home. No use of facilities available in the community, such as library. |

## 4a. THE EXTENT AND CONTENT OF INDOOR ACTIVITIES OF THE FAMILY

Criteria: *Variety ( Discussion, undertaking a project, etc. )
*Frequency
*Educational value

Questions: 3, 6, 21, 22

Rating Scale:

| | |
|---|---|
| 9 | A variety of activities in the home, having very high educational value, are frequently undertaken by the family. Both parents participate. |
| 8 | |
| 7 | A variety of activities in the home, having high educational value, are often undertaken by the family. One or both parents participate. |
| 6 | |
| 5 | A moderate variety of activities in the home, having general educational value, are sometimes undertaken by the family. One or both parents participate. |
| 4 | |
| 3 | Only a few of the family activities in the home have direct educational value. Often only one parent participates. |
| 2 | |
| 1 | No family activities in the home. Or, the activities have hardly any direct educational value. Both parents are generally not available in any educational activities. |

## 4b. THE EXTENT AND CONTENT OF OUTDOOR ACTIVITY OF THE FAMILY

Criteria: *Variety ( e. g. , visits to a museum or a zoo, traveling to historical places )
*Frequency
*Educational value

Questions: 3, 4, 66

Rating Scale:

| | |
|---|---|
| 9 | A variety of child-centered activities outside the home having very high educational value frequently undertaken by the family. Both parents participate. Initiated and planned by different members of the family, instead of just one person. |
| 8 | |
| 7 | A variety of outside activities having high educational value are often undertaken by the family. One or both parents participate. Generally planned by the parents.. |
| 6 | |
| 5 | A moderate variety of outside activities that have high educational value. Such activities are only sometimes undertaken by the family. One or both parents participate. Generally planned by any one of the parents. |
| 4 | |
| 3 | A majority of outside activities have more recreational or other purposes, with incidental educational value. Or, very few outdoor activities. One or both parents participate. Generally planned by any one of the parents. Others follow. |
| 2 | |
| 1 | Practically no outside activities of the family having educational purposes. |

## 4c. USE OF TV AND OTHER SUCH MEDIA

Criteria: *Purpose of the use
*Extent of the use

Questions: 27, 28

Rating Scale:

| | |
|---|---|
| 9 | Regular use for specifically educational purpose. Recreational value subsidiary. Frequent follow-up discussion. |
| 8 | |
| 7 | Regular use for general educational and recreational purposes. Sometimes follow-up discussions. |
| 6 | |
| 5 | Fairly regular use. Recreational purposes often more predominant than educational purpose. Occasionally follow-up discussion. |
| 4 | |
| 3 | Not much use of TV and other media. Mostly recreational purpose when used. Hardly any follow-up discussion. |
| 2 | |
| 1 | No use of any of these media. |

## 4d. USE OF BOOKS, PERIODICAL LITERATURE, LIBRARY AND OTHER SUCH FACILITIES

Criteria: *Variety of material used by the family members ( e. g., books, magazines, newspapers )
*Encouragement to children to use such materials ( e. g., helping them to be a member of the library, suggesting exchange of reading materials with friends )

Questions: 3, 5, 6, 10

Rating Scale:

| | |
|---|---|
| 9 | Extensive reading of a variety of material by the family members. Great encouragement to the child for the same from his early age, even before he learned to read. |
| 8 | |
| 7 | Fairly extensive reading of a good variety of material by the family members. Encouragement to children from the time they learned to read. |
| 6 | |
| 5 | Moderate reading of some variety of material by the family members. Some encouragement to the children to read. |
| 4 | |
| 3 | Some reading, infrequently done by the members of the family. Only occasional encouragement to the children for the use of reading. |
| 2 | |
| 1 | Hardly any reading done by the members of the family. No encouragement to the children to read. |

## 5a. NATURE AND QUALITY OF TOYS, GAMES, AND HOBBIES MADE AVAILABLE TO THE CHILD

Criteria: *Thought-provoking element in the toys, etc.
*Variety

Questions: 8, 9, 63

Rating Scale:

| | |
|---|---|
| 9 | A large variety of thought-provoking and educational toys, games, etc., provided to child since early childhood. Great encouragement for the development of educationally oriented hobbies. |
| 8 | |
| 7 | A fairly good variety of thought-provoking and educational toys, games, etc., provided to the child since early childhood. Some encouragement for the development of educationally oriented hobbies. |
| 6 | |
| 5 | Some thought-provoking and educational toys, games, etc., available. No educationally oriented hobbies. |
| 4 | |
| 3 | Only a few thought-provoking and educational toys, games, etc., available. No educationally oriented hobbies. |
| 2 | |
| 1 | Hardly any thought-provoking and educational toys, games etc., available. No educationally oriented hobbies. |

## 5c. RANGE OF VARIATION IN MATERIALS AVAILABLE FOR CHILDREN'S PLAY ACTIVITIES

Criteria: (Through observation as well as questioning)
*Variety of types of objects and materials (e.g., textures, weight, shape, ways to manipulate, etc.)
*Educational value

Questions: 9, 63

Rating Scale:

| | |
|---|---|
| 9 | Very wide variety of materials educationally useful for assimilation and accommodation of schemata. |
| 8 | |
| 7 | Quite wide variety of materials educationally useful for assimilation and accommodation of schemata. |
| 6 | |
| 5 | Moderate amount of variety in objects and materials available and useful in promotion of assimilation and accommodation of schemata. |
| 4 | |
| 3 | Very little variety in materials useful in promotion of assimilation and accommodation. |
| 2 | |
| 1 | Great paucity of objects and materials available for exploration and manipulation. |

## 6a. DEGREE OF STRUCTURE AND ROUTINE IN THE HOME MANAGEMENT

Criteria: *Planning and distribution of work
*Punctuality in following it

Questions: 51, 52, 53

Rating Scale:

| | |
|---|---|
| 9 | Well planned home management. Distribution of work among the family members. Punctuality and discipline in following the plans. |
| 8 | |
| 7 | Major duties distributed among the family members. planning followed quite consistently. |
| 6 | |
| 5 | Moderate planning. It is followed with only moderate regularity. |
| 4 | |
| 3 | Some efforts made for planning and distribution of work which was not followed systematically. Specific duties mentioned. |
| 2 | |
| 1 | No planning of household work. |

## 6b. PREFERENCE FOR EDUCATIONAL ACTIVITIES OVER OTHER PLEASURABLE THINGS

Criteria: *Priority to educational activities attached by the parents
*Continuity of academic activities (e.g., taking courses after completing formal education)

Questions: 47, 50, 51, 54, 55, 56

Rating Scale:

| | |
|---|---|
| 9 | Very high priority attached by the parents to studies and other educational activities. Great encouragement to sacrifice pleasurable activities for completing school work. Both parents continued studies voluntarily after completing formal education. |
| 8 | |
| 7 | Educational activities and studies stand among the activities of high priority. Encouragement to complete school work before undertaking other activities. One or both parents continued studies voluntarily after completing formal education. |
| 6 | |
| 5 | Educational activities and studies moderately high in priority. A few others higher in priority. One of the parents continued studies either voluntarily or as occupational requirement after completing formal education. |
| 4 | |
| 3 | Other activities higher in priority than educational activities and studies. No specific habit formation of completing school work before undertaking other activities emphasized. One of the parents continued studies after completing formal education as an occupational requirement. |
| 2 | |
| 1 | No emphasis attached to scholastic studies by the parents. It is often made subsidiary to other activities. Parents did not continue any studies after completing their formal education. |

## 7a. RANGE OF VARIATION IN MODELS FOR IDENTIFICATION

Criteria: *Variety in status-role positions of adults with whom child has contact
*Frequency of contact with adults of differing interests and backgrounds

Questions: 23, 24, 25, 39, 64, 65, 67, 71, 72

Rating Scale:

| | |
|---|---|
| 9 | Child has very frequent contact with adults who represent a large variety of status positions and who differ widely in their interests, occupational status and educational background. |
| 8 | |
| 7 | Child has quite frequent contact with adults who represent a fair number of status positions. These adults have interests, educational and occupational backgrounds representing a fairly wide range of differences. |
| 6 | |
| 5 | Child encounters a moderate range of status positions in his interaction with adults. The adults who are well known to him represent a moderate range of occupational and educational backgrounds, and several areas of interest are represented. |
| 4 | |
| 3 | Child has some contact with adults who represent a few different status positions. These adults have a rather small range of difference in their educational and occupational backgrounds, and in their interests. |
| 2 | |
| 1 | Child has very little contact with adults outside his immediate biological family. The few other adults with whom he has occasional contact represent a very narrow range of differences in interests and in occupational and educational backgrounds. |

## 7b. DEGREE OF IDENTIFICATION WITH ACHIEVEMENT MODELS

Criteria: *Extent to which child indicates admiration or respect for adults ( real or fictional ) who have achieved economic, vocational, or educational success

*Frequency with which child imitates behavior of real or fictional achievement models

Questions: 23, 24, 39, 64, 65

Rating Scale:

9 Child very frequently indicates admiration or respect for adults who are considered successful in economic, vocational or educational matters. Child frequently imitates behavior of real or fictional characters who have been successful in these areas.

8

7 Child quite often indicates admiration or respect for adults who have been successful in economic, vocational or educational accomplishments. Child quite often imitates the behavior of real or fictional characters who have been successful.

6

5 Child occasionally indicates admiration or respect for adults who have been successful in economic, vocational or educational accomplishments. Child sometimes imitates the behavior of such adults, fictional or real.

4

3 Child seldom indicates admiration or respect for adults who have been successful in economic, vocational or educational accomplishments. He seldom imitates the behavior of such adults, fictional or real.

2

1 Child almost never indicates admiration or respect for adults who have been successful in economic, vocational or educational accomplishments. Child does not imitate behavior of such successful adults, fictional or real.

## 8a. VARIATION IN SODALITY MEMBERSHIP AND PARTICIPATION OF FAMILY MEMBERS

Criteria: *Number and variation in types of sodalities in which family members claim membership ( e. g. , PTA, Catholic Women's Society, Boy's Club, etc. )

*Frequency of participation in sodalities in which membership is claimed

*Social inclusiveness of sodalities in which membership is claimed

Questions: 66, 67, 68

Rating Scale:

| | |
|---|---|
| 9 | Family members belong to many sodalities. Many types of sodalities are represented. All family members participate very frequently in the activities of their sodalities. Membership of the sodalities includes people of a wide range of social statuses and areas of residence. |
| 8 | |
| 7 | Most family members belong to some sodalities. Several types of sodalities are represented. Most family members participate quite often in the activities of their organizations. Membership includes people of a fair variety of social statuses and areas of residence. Participation is fairly regular. |
| 6 | |
| 5 | At least one parent belongs to more than one sodality. More than one type of sodality is represented, and participation is with some regularity. Membership includes mostly people from local neighborhood, but other areas and statuses are also represented. |
| 4 | |
| 3 | At least one family member belongs to at least one sodality in addition to church. Only one type of sodality ( e. g. , religious, fraternal ) is represented. Participation is infrequent, and membership of the sodality almost exclusively limited to people of similar status, neighborhood, and ethnic affiliations. |
| 2 | |
| 1 | Neither parent claims membership in any sodality other than church. Even for church participation is almost nil. |

## 8b. INTERPERSONAL CONTACTS IN COMMUNITY

Criteria: *Frequency and diversity of commercial and social contacts in the community ( e. g., shopping in a variety of areas of town )

Questions: 67, 69, 70

Rating Scale:

| | |
|---|---|
| 9 | Shopping done in a variety of supermarkets. Shopping frequently done in different shopping centers which may be some distance from area of residence. |
| 8 | |
| 7 | Shopping for groceries done in more than one market. More than once a month shopping trips to shopping centers in areas of town which are some distance from area of residence. |
| 6 | |
| 5 | Shopping occasionally for groceries in stores other than the nearest supermarket. Shopping trips to centers in areas of town which are some distance from area of residence take place less than once a month, but more frequently than every six months. |
| 4 | |
| 3 | Shopping for groceries usually done in nearest large market. Almost never shop in other supermarkets. Travel to distant shopping centers no more than once a year. |
| 2 | |
| 1 | Shopping for groceries always done in small neighborhood market. Never shop in supermarket. Never travel to distant shopping centers. |

## 9a. PARENTAL PERCEPTION OF IMPORTANCE OF SCHOOL FOR SUCCESSFUL LIFE - AS SEEN IN SELF AND CONTEMPORARIES

Criteria: *Parents' estimate of importance of schooling to obtain a satisfying life.

Questions: 61, 73, 74

Rating Scale:

| | |
|---|---|
| 9 | Parents feel formal education is the only way to get ahead and to build a successful, satisfying life. The only friends or relatives who got ahead were those with good formal education. |
| 8 | |
| 7 | Education is very important in getting ahead and building a satisfying life. A good education helps more than any one other single factor. |
| 6 | |
| 5 | Education is of moderate importance in getting ahead and building a successful, satisfying life. Education is mentioned as a goal in desired change in life, and as thing to obtain with imaginary inheritance. |
| 4 | |
| 3 | Importance of education is at least verbalized. Education mentioned as one thing to be obtained with imaginary inheritance. |
| 2 | |
| 1 | What is done in the schools is unrelated to obtaining a successful, satisfying life. Parent has no concept of what a satisfying life would be, or of how it would be related to education. |

## 9b. PARENTS' PERCEPTION OF IMPORTANCE OF SCHOOL FOR SUCCESSFUL LIFE FOR CHILD

Criteria: Parents' estimate of importance of schooling for child.

Questions: 46, 62, 73, 74, 49

Rating Scale:

| | |
|---|---|
| 9 | Parents feel formal education is the only way child can get ahead and build a successful, satisfying life. |
| 8 | |
| 7 | Education will be very important in helping the child to get ahead and build a successful, satisfying life. A good education will help more than any one single other factor. Education mentioned as most important need. |
| 6 | |
| 5 | Education will be of moderate importance in helping the child to get ahead and build a successful, satisfying life, Education mentioned as one use for imaginary inheritance or improvement of life. |
| 4 | |
| 3 | Education will be of some importance, but it will be possible to live a satisfying life without a lot of formal education. Family harmony is hallmark of satisfying life. |
| 2 | |
| 1 | What is done in the schools will have little bearing on preparing the child to have a satisfying life. No concept of what a satisfying life would be. |

## APPENDIX C. FAMILY DATA QUESTIONNAIRE

1. Please provide the following information on the children in your family.

| Name | Age | Sex | Grade Place of Birth |
|---|---|---|---|
| 1) ____________ | ___ | ___ | ________________ |
| 2) ____________ | ___ | ___ | ________________ |
| 3) ____________ | ___ | ___ | ________________ |
| 4) ____________ | ___ | ___ | ________________ |
| 5) ____________ | ___ | ___ | ________________ |
| 6) ____________ | ___ | ___ | ________________ |
| 7) ____________ | ___ | ___ | ________________ |
| 8) ____________ | ___ | ___ | ________________ |

Use reverse side if additional space is needed.

2. What is your full name? ________________________

3. Where were you born? ________________________

4. What is your husband's full name? ________________________

5. Where was he born? ________________________

6. Are you presently married ___, Divorced___, Separated___?

7. Have you been married before? yes no How many times? ___

8. Are there any other persons, besides your husband and children, who live in your home? What are their ages and relationship to you?

____________________ ____________________

____________________ ____________________

____________________ ____________________

9. How long has your family lived in the United States? That is, how long ago did your family come to this country? ____________.

10. How long have you lived in your present home? ________________

11. Where did you live before? ____________________________

12. Why did you choose this home? This neighborhood? __________

____________________________________________

____________________________________________

13. Do you usually work outside the home? yes no

14. If so, do you work full time ___, part time___, once in a while ___?

15. Are you now employed? yes no

16. If so, where?____________________ What specific job?__________

17. If unemployed, how long?__________What is your usual occupation? ______________________________________

18. Does your husband usually work outside the home? yes no

19. If so, does he work full time___, part time___, once in a while ___?

20. Is he now employed? yes no

21. If so, where? ____________________ What specific job? ________

22. If unemployed, how long?__________ What is his usual occupation?

____________________________________________

23. What is the highest school grade which you completed?

1 2 3 4 5 6 7 8 9 10 11 12 college 1 yr. 2 yrs. 3 yrs. 4 yrs.

24. What is the highest school grade completed by your husband?

1 2 3 4 5 6 7 8 9 10 11 12 college 1 yr. 2 yrs. 3 yrs. 4 yrs.

25. (If applicable) How many of your children have graduated from high school? ___________

26. How much income from all sources did your family have last year? (This information is strictly confidential and will not be disclosed to tax officials, welfare agencies, or anyone else.)

Less than $1,000___, $1,000 - $1,999___, $2,000 - $2,999___,
$3,000 - $3,999____, $4,000 - $4,999___, $5,000 - $5,999___,
$6,000 - $7,999____. $8,000 - $9,999___, $10,000 plus _____,

Don't know _____.

# APPENDIX D. CHECKLIST FOR HOME CHARACTERISTICS

I. Living Room
  A. Eating area in living room: yes no
    Desk in living room: yes no
    Bed in living room: yes no If yes, number ________
    If yes, type of beds ____________________________

  B. Floor Covering
    Wall-Wall Carpet____Rug____Scatter Rugs____
    Linoleum____Tile (ceramic)____Tile (vinyl, asphalt)____
    Hardwood____Wood (sheathing)____Dirt____Other____
    Condition: V. poor____Poor____Av____Good____
    V. good____

  C. Lighting
    Bare, suspended bulb____Ceiling fixture____
    Floor lamps____Table lamps____
    Other decorator-type lamps ________________________

  D. Interior Walls
    Plaster or Dry Wall____Exposed Brick____
    Exposed Block____Painted____Wall paper____
    Other: ____________________________________
    Condition: V. poor____ Poor____ Av____ Good____
    V. good____

II. Type Heating and Cooling
  A. Heating
    Central heating____Wall or floor furnace____
    Portable space heater: electric____ or gas____
    Wood stove____None____Other ____________________

  B. Cooling
    Refrigeration____Evaporative____None____

III. House Construction
  Frame____Adobe____Cement block____Brick, burnt adobe____
  Other ________________________________________

IV. Roofing
Thatched or jacal____ Metal____ Roll Roofing____
Asphalt shingle____Tile____Tar____

V. Yard
Grass: yes no Trees: yes No Shrubs: yes no
Flowers: yes no Gravel: yes no Dirt: yes no

VI. Play Equipment
Swing____ Slide____ Teeter totter____ Sand box____
Basketball area____ Wagon____ Scooter____
Other________________________________________________

VII. Estimate of general grade of housing
Excellent____ Very good____ Good____ Average____ Fair____
Poor____ Very poor____. (See Warner, 1949, pp. 149-150)

VIII. Dwelling Area
Very high____ High____ Above average____ Average____
Below average____ Low____ Very low____. (See Warner, 1949)

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